

Frit Development for High Level Waste Sludge Batch 5: Compositional Trends for Varying Aluminum Concentrations

K. M. Fox
T. B. Edwards
D. R. Best
I. A. Reamer
R. J. Workman

August 2008

Environmental & Chemical Process Technology
Savannah River National Laboratory
Aiken, SC 29808

This document was prepared in conjunction with work
accomplished under Contract No. DE-AC09-08SR22470 with the
U.S. Department of Energy.



DISCLAIMER

This work was prepared under an agreement with and funded by the U.S. Government. Neither the U.S. Government or its employees, nor any of its contractors, subcontractors or their employees, makes any express or implied: 1. warranty or assumes any legal liability for the accuracy, completeness, or for the use or results of such use of any information, product, or process disclosed; or 2. representation that such use or results of such use would not infringe privately owned rights; or 3. endorsement or recommendation of any specifically identified commercial product, process, or service. Any views and opinions of authors expressed in this work do not necessarily state or reflect those of the United States Government, or its contractors, or subcontractors.

This document was prepared in conjunction with work accomplished under Contract No. DE-AC09-08SR22470 with the U.S. Department of Energy.

Keywords: *DWPF, frit, glass
formulation, sludge batch 5*

Retention: *permanent*

Frit Development for High Level Waste Sludge Batch 5: Compositional Trends for Varying Aluminum Concentrations

K. M. Fox
T. B. Edwards
D. R. Best
I. A. Reamer
R. J. Workman

August 2008

Environmental & Chemical Process Technology
Savannah River National Laboratory
Aiken, SC 29808

This document was prepared in conjunction with work
accomplished under Contract No. DE-AC09-08SR22470 with the
U.S. Department of Energy.



REVIEWS AND APPROVALS

AUTHORS:

K.M. Fox, Process Engineering Technology Date

T.B. Edwards, Statistical Consulting Section Date

D.R. Best, Process Engineering Technology Date

I.A. Reamer, Process Engineering Technology Date

R.J. Workman, Process Engineering Technology Date

TECHNICAL REVIEWER:

D.K. Peeler, Process Engineering Technology Date

APPROVERS:

C.C. Herman, Manager, Process Engineering Technology Group Date

J.C. Griffin, Manager, Date
Environmental & Chemical Process Technology Research Programs

J.E. Occhipinti, Manager, Date
Waste Solidification Engineering

EXECUTIVE SUMMARY

The objective of this study was to experimentally measure the properties and performance of a series of glasses with compositions that could represent Sludge Batch 5 (SB5) as processed at the Defense Waste Processing Facility (DWPF). The data was used to provide recommendations to the Liquid Waste Organization (LWO) regarding blending and washing strategies in preparing SB5 based on acceptability of the glass compositions. These data were also used to guide frit optimization efforts as the SB5 composition was finalized.

Glass compositions for this study were developed by combining a series of SB5 composition projections with a group of frits. Three composition projections for SB5 were developed using a model-based approach at Savannah River National Laboratory (SRNL). These compositions, referred to as SB5 Cases B, C and D, projected removal of 25, 50 and 75% (respectively) of the aluminum in Tank 51 through the low temperature aluminum dissolution process. The frits for this study (Frits 530 through 537) were selected based on their predicted operating windows (i.e., ranges of waste loadings over which the predicted properties of the glasses were acceptable) and their potential (based on historical trends) to provide acceptable melt rates for SB5.

Six additional glasses were designed to evaluate alternatives for uranium in DWPF-type glasses used for variability studies and some scoping studies. Since special measures are necessary when working with uranium-containing glasses in the laboratory, it is desirable as a cost and time saving measure to find an alternative for uranium to support frit optimization efforts. Hafnium and neodymium were investigated as potential surrogates for uranium, and other glasses were made by simply excluding the radioactive components and renormalizing the glass composition.

The study glasses were fabricated and characterized at SRNL. Chemical composition analyses suggested only minor difficulties in meeting the targeted compositions for some of the oxides for some of the glasses. Although minor differences were observed, they did not have a significant impact on the conclusions made in this study. Several of the study compositions showed retention of more than 0.5 wt% SO_4^{2-} in glass.

Trevorite (a spinel) was the only crystalline phase that was positively identified in a few of the study glasses after the canister centerline cooled (CCC) heat treatment. Spinel is not of concern as they have been shown to have little impact on the durability of high level waste glasses. The crystallization behavior of the surrogate glasses was generally the same as that of their U_3O_8 -containing counterparts. There are two pairs that were exceptions: SB5-04 (amorphous) and SB5-24 (possible trevorite), along with SB5-07 (amorphous) and SB5-25 (trevorite). In these cases, the surrogate glasses (SB5-24 and SB5-25) appear to be more conservative (more prone to crystallization) than their U_3O_8 -containing counterparts.

Chemical durability was quantified using the Product Consistency Test (PCT). The normalized leachate (NL) values for B, Li, Na and Si for all of the study glasses were well below those of the Environmental Assessment (EA) benchmark glass, regardless of heat treatment or compositional view. This indicates that all of the glasses had very acceptable durability performance. The highest NL [B] for the study glasses was 0.914 g/L (the quenched version of glass SB5-13), normalized using the measured, bias-correct composition. There was little practical impact of the CCC heat treatment on the PCT responses of the study glasses. The measured PCT responses were predictable by the current ΔG_p models.

In general, the PCT responses for the surrogate glasses or the glasses without U_3O_8 were quite similar to their U_3O_8 -containing counterparts. The average percent error in NL [B] normalized by the measured, bias-corrected compositions for the surrogate glasses compared with their radioactive counterparts was 8.8%. The largest difference in NL [B] was 0.152 g/L.

While similarities existed in crystallization behavior and PCT response for both the surrogates and the glasses renormalized without U_3O_8 , additional data must be collected before the best solution to fabricating test glasses without radioactive components can be identified. Further surrogate studies are currently underway at SRNL.

The results of this study indicate that a frit composition can be identified that will provide a processable and durable glass when combined with SB5 at the DWPF. Additional studies are underway to recommend a frit that continues to meet process and performance requirements as well as to provide an enhanced melt rate for improved waste throughput.

TABLE OF CONTENTS

LIST OF TABLES	ix
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS.....	x
1.0 Introduction.....	1
2.0 Objectives	1
3.0 Experimental Procedure.....	2
3.1 Selection of Glass Compositions.....	2
3.2 Glass Fabrication	7
3.3 Property Measurements	7
3.3.1 X-Ray Diffraction Analysis	7
3.3.2 Compositional Analysis	7
3.3.3 Product Consistency Test (PCT).....	7
4.0 Results and Discussion	8
4.1 Homogeneity	8
4.2 A Statistical Review of the Chemical Composition Measurements.....	11
4.2.1 Measurements in Analytical Sequence	12
4.2.2 Composition Measurements by Glass Identifier	12
4.2.3 Batch 1 and Uranium Standard Results.....	12
4.2.4 Composition Measurements by Glass Identifier with Targeted Compositions.	13
4.2.5 Measured versus Targeted Compositions	14
4.2.6 Assessment of SO_4^{2-} Values.....	14
4.2.7 MAR Assessment of the SB4/Second Decant VS Glasses	15
4.3 A Statistical Review of the PCT Results for These Initial SB5 Glasses.....	17
4.3.1 Measurements in Analytical Sequence	17
4.3.2 Results for the Samples of the Multi-Element Solution Standard	17
4.3.3 Measurements by Glass Identifier.....	18
4.3.4 Normalized PCT Results.....	18
4.3.5 Effects of Heat Treatment on PCTs	25
4.3.6 Initial Comparisons of Surrogate Pairs	25
4.3.7 Predicted versus Measured Durability	25

5.0 Conclusions.....	27
6.0 References.....	29
Appendix A.....	29
Appendix B.....	29

LIST OF TABLES

Table 3-1. SB5 composition projections used in this study.	2
Table 3-2. Compositions of the candidate frits used in this study.....	3
Table 3-3. Target compositions of the study glasses.....	4
Table 3-4. Non-radioactive glass compositions with and without surrogates for uranium.	6
Table 4-1. Visual observations and XRD results for each of the study glasses.	9
Table 4-2. Results of MAR Assessment of SB4 VS Glasses for Measured, Bias-Corrected, and Targeted Compositional Views.....	16
Table 4-3. Results from Samples of the Multi-Element Solution Standard	18
Table 4-4. Normalized PCTs by Glass ID and Compositional View for Initial SB5 Study Glasses.	20

LIST OF FIGURES

Figure 4-1. SO_4^{2-} Values for Glasses in the Analytical Plan by Glass ID.	14
Figure 4-2. Normalized Leachate for Boron versus ΔG_p Model Prediction with 95% Confidence Interval for Individual PCTs.	26

LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ARM	Approved Reference Material
bc	bias-corrected
CCC	Canister Centerline Cooled
CPC	Chemical Process Cell
DWPF	Defense Waste Processing Facility
EA	Environmental Assessment
ICP-ES	Inductively Coupled Plasma – Emission Spectroscopy
LM	Lithium Metaborate
LWO	Liquid Waste Organization
MAR	Measurement Acceptability Region
NL	Normalized Leachate
PCCS	Product Composition Control System
PCT	Product Consistency Test
PF	Peroxide Fusion
PSAL	Process Science Analytical Laboratory
SB5	Sludge Batch 5
SRNL	Savannah River National Laboratory
SRS	Savannah River Site
T _L	Liquidus Temperature
WL	Waste Loading
XRD	X-ray Diffraction

1.0 Introduction

The contents of Tank 51 have been blended with Purex sludge from Tank 7 to constitute Sludge Batch 5 (SB5). The Savannah River Site (SRS) Liquid Waste Organization (LWO) performed low-temperature Al-dissolution in Tank 51 to reduce the total mass of sludge solids and Al being fed to the Defense Waste Processing Facility (DWPF). A radioactive demonstration using a 3 L Tank 51 sludge slurry sample was performed to verify the Tank Farm processing parameters.¹ The aluminum dissolved sludge was used to determine potential downstream impacts so that technical issues could be identified before the start of SB5 processing. The potential downstream impacts assessed included the Tank Farm washing and concentration process and the DWPF Chemical Process Cell (CPC) and melter processing envelopes. The chemical composition of this 3 L Tank 51 sample was used to project potential compositions of SB5 as it will be processed by the DWPF. These projections were used by the Savannah River National Laboratory (SRNL) to develop frit compositions for SB5 that will produce glasses that will be acceptable for disposition to the federal repository.

2.0 Objectives

The objective of this study is to experimentally measure the properties and performance of a series of glasses with compositions that are anticipated to represent SB5 as processed at the DWPF. The data will be used to provide recommendations to the LWO regarding blending and washing strategies in preparing SB5 based on acceptability of the glass compositions. These data will also be used to guide frit optimization efforts as the SB5 composition is finalized.

3.0 Experimental Procedure

3.1 Selection of Glass Compositions

Glass compositions for this study were developed by combining a series of SB5 composition projections with a group of frits. Three composition projections for SB5 were developed using a model-based approach at SRNL. These compositions, referred to as SB5 Cases B, C and D, project removal of 25, 50 and 75% (respectively) of the aluminum in Tank 51 through the low temperature aluminum dissolution process. The development of these SB5 composition projections is described in further detail in a previous report.² A fourth SB5 composition was provided by LWO in 2007.^a This composition, which will be referred to as 'LWO Al-Diss', represents 50% removal of aluminum from Tank 51 and a blend with the heel of SB4 occurring on August 31, 2008. The compositions of these four SB5 projections are given in Table 3-1.

Table 3-1. SB5 composition projections used in this study.

Oxide	SB5 Case B	SB5 Case C	SB5 Case D	LWO Al-Diss
Ag ₂ O	0.010	0.010	0.012	0.000
Al ₂ O ₃	28.972	24.894	20.914	18.993
BaO	0.102	0.113	0.121	0.165
CaO	1.781	1.966	2.108	2.252
CdO	0.061	0.066	0.072	0.000
Ce ₂ O ₃	0.371	0.409	0.439	0.266
CoO	0.024	0.026	0.028	0.000
Cr ₂ O ₃	0.373	0.411	0.440	0.245
CuO	0.012	0.013	0.013	0.087
Fe ₂ O ₃	23.246	25.644	27.491	27.641
K ₂ O	0.067	0.072	0.080	0.202
La ₂ O ₃	0.163	0.180	0.193	0.046
MgO	1.178	1.299	1.393	1.228
MnO	4.861	5.362	5.748	6.094
Na ₂ O	24.832	24.194	24.500	27.206
NiO	2.730	3.011	3.228	3.154
P ₂ O ₅	0.528	0.581	0.622	0.000
PbO	0.022	0.023	0.026	0.096
SO ₄ ²⁻	0.729	0.761	0.815	1.439
SiO ₂	1.886	2.081	2.234	1.838
SrO	0.319	0.351	0.377	0.000
ThO ₂	0.000	0.000	0.000	0.011
TiO ₂	0.026	0.029	0.031	0.922
U ₃ O ₈	7.436	8.203	8.794	7.696
ZnO	0.016	0.017	0.018	0.111
ZrO ₂	0.258	0.285	0.306	0.307

The frits for this study were selected based on their predicted operating windows (i.e., ranges of waste loadings over which the predicted properties of the glasses were acceptable) and potential to provide acceptable melt rates for SB5. The selection process for the frits used in this study is also described in a previous report.² The compositions of each frit are given in Table 3-2.

^a Data provided by H. B. Shah, Washington Savannah River Company, via email on July 31, 2007.

Table 3-2. Compositions of the candidate frits used in this study.

Frit ID	B₂O₃	CaO	Li₂O	Na₂O	SiO₂
530	10	4	7	7	72
531	11	2	7	7	73
532	14	2	6	7	71
533	16	0	5	8	71
534	15	0	9	4	72
535	14	0	7	8	71
536	15	0	5	10	70
537	16	0	4	7	73

Frits 530, 531, 532 and 533 were each combined with the four SB5 composition projections to form the first 16 glass compositions (glasses SB5-01 through SB5-16). All of the study glasses targeted 38% waste loading (WL) in anticipation of higher WL targets for DWPF processing of SB5. Frits 534, 535, 536 and 537 were combined with SB5 Case B, SB5 Case C, SB5 Case D and LWO Al-diss, respectively, as these frits provided good operating windows with these specific SB5 composition projections. That is, while the earlier frits provide good operating windows with all four of the SB5 composition projections, these frits are tailored specifically for the individual composition projections that they are combined with. These combinations form glasses SB5-17 through SB5-20. The compositions of the first 20 study glasses are given in Table 3-3.

Table 3-3. Target compositions of the study glasses.

Glass ID	SB5-01	SB5-02	SB5-03	SB5-04	SB5-05	SB5-06	SB5-07	SB5-08	SB5-09	SB5-10	SB5-11	SB5-12
Frit ID	530	531	532	533	530	531	532	533	530	531	532	533
Sludge Type	Case B	Case B	Case B	Case B	Case C	Case C	Case C	Case C	Case D	Case D	Case D	Case D
Ag ₂ O	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al ₂ O ₃	11.009	11.009	11.009	11.009	9.460	9.460	9.460	9.460	7.947	7.947	7.947	7.947
B ₂ O ₃	6.200	6.820	8.680	9.920	6.200	6.820	8.680	9.920	6.200	6.820	8.680	9.920
BaO	0.039	0.039	0.039	0.039	0.043	0.043	0.043	0.043	0.046	0.046	0.046	0.046
CaO	3.157	1.917	1.917	0.677	3.227	1.987	1.987	0.747	3.281	2.041	2.041	0.801
CdO	0.023	0.023	0.023	0.023	0.025	0.025	0.025	0.025	0.027	0.027	0.027	0.027
Ce ₂ O ₃	0.141	0.141	0.141	0.141	0.155	0.155	0.155	0.155	0.167	0.167	0.167	0.167
CoO	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011
Cr ₂ O ₃	0.142	0.142	0.142	0.142	0.156	0.156	0.156	0.156	0.167	0.167	0.167	0.167
CuO	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Fe ₂ O ₃	8.834	8.834	8.834	8.834	9.745	9.745	9.745	9.745	10.447	10.447	10.447	10.447
HfO ₂	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K ₂ O	0.025	0.025	0.025	0.025	0.027	0.027	0.027	0.027	0.030	0.030	0.030	0.030
La ₂ O ₃	0.062	0.062	0.062	0.062	0.068	0.068	0.068	0.068	0.073	0.073	0.073	0.073
Li ₂ O	4.340	4.340	3.720	3.100	4.340	4.340	3.720	3.100	4.340	4.340	3.720	3.100
MgO	0.447	0.447	0.447	0.447	0.494	0.494	0.494	0.494	0.529	0.529	0.529	0.529
MnO	1.847	1.847	1.847	1.847	2.038	2.038	2.038	2.038	2.184	2.184	2.184	2.184
Na ₂ O	13.776	13.776	13.776	14.396	13.534	13.534	13.534	14.154	13.650	13.650	13.650	14.270
Nd ₂ O ₃	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NiO	1.037	1.037	1.037	1.037	1.144	1.144	1.144	1.144	1.227	1.227	1.227	1.227
P ₂ O ₅	0.201	0.201	0.201	0.201	0.221	0.221	0.221	0.221	0.236	0.236	0.236	0.236
PbO	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010
SiO ₂	45.357	45.977	44.737	44.737	45.431	46.051	44.811	44.811	45.489	46.109	44.869	44.869
SO ₄	0.277	0.277	0.277	0.277	0.289	0.289	0.289	0.289	0.310	0.310	0.310	0.310
SrO	0.121	0.121	0.121	0.121	0.134	0.134	0.134	0.134	0.143	0.143	0.143	0.143
ThO ₂	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TiO ₂	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.012	0.012	0.012	0.012
U ₃ O ₈	2.826	2.826	2.826	2.826	3.117	3.117	3.117	3.117	3.342	3.342	3.342	3.342
ZnO	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.007	0.007	0.007	0.007
ZrO ₂	0.098	0.098	0.098	0.098	0.108	0.108	0.108	0.108	0.116	0.116	0.116	0.116

Table 3-3. Target compositions of the study glasses. (continued)

Glass ID	SB5-13	SB5-14	SB5-15	SB5-16	SB5-17	SB5-18	SB5-19	SB5-20
Frit ID	530	531	532	533	534	535	536	537
Sludge Type	LWO Al-Diss	LWO Al-Diss	LWO Al-Diss	LWO Al-Diss	Case B	Case C	Case D	LWO Al-Diss
Ag ₂ O	0.000	0.000	0.000	0.000	0.004	0.004	0.004	0.000
Al ₂ O ₃	7.217	7.217	7.217	7.217	11.009	9.460	7.947	7.217
B ₂ O ₃	6.200	6.820	8.680	9.920	9.300	8.680	9.300	9.920
BaO	0.063	0.063	0.063	0.063	0.039	0.043	0.046	0.063
CaO	3.336	2.096	2.096	0.856	0.677	0.747	0.801	0.856
CdO	0.000	0.000	0.000	0.000	0.023	0.025	0.027	0.000
Ce ₂ O ₃	0.101	0.101	0.101	0.101	0.141	0.155	0.167	0.101
CoO	0.000	0.000	0.000	0.000	0.009	0.010	0.011	0.000
Cr ₂ O ₃	0.093	0.093	0.093	0.093	0.142	0.156	0.167	0.093
CuO	0.033	0.033	0.033	0.033	0.005	0.005	0.005	0.033
Fe ₂ O ₃	10.504	10.504	10.504	10.504	8.834	9.745	10.447	10.504
HfO ₂	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K ₂ O	0.077	0.077	0.077	0.077	0.025	0.027	0.030	0.077
La ₂ O ₃	0.018	0.018	0.018	0.018	0.062	0.068	0.073	0.018
Li ₂ O	4.340	4.340	3.720	3.100	5.580	4.340	3.100	2.480
MgO	0.467	0.467	0.467	0.467	0.447	0.494	0.529	0.467
MnO	2.316	2.316	2.316	2.316	1.847	2.038	2.184	2.316
Na ₂ O	14.678	14.678	14.678	15.298	11.916	14.154	15.510	14.678
Nd ₂ O ₃	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NiO	1.198	1.198	1.198	1.198	1.037	1.144	1.227	1.198
P ₂ O ₅	0.000	0.000	0.000	0.000	0.201	0.221	0.236	0.000
PbO	0.036	0.036	0.036	0.036	0.008	0.009	0.010	0.036
SiO ₂	45.338	45.958	44.718	44.718	45.357	44.811	44.249	45.958
SO ₄	0.547	0.547	0.547	0.547	0.277	0.289	0.310	0.547
SrO	0.000	0.000	0.000	0.000	0.121	0.134	0.143	0.000
ThO ₂	0.004	0.004	0.004	0.004	0.000	0.000	0.000	0.004
TiO ₂	0.350	0.350	0.350	0.350	0.010	0.011	0.012	0.350
U ₃ O ₈	2.925	2.925	2.925	2.925	2.826	3.117	3.342	2.925
ZnO	0.042	0.042	0.042	0.042	0.006	0.006	0.007	0.042
ZrO ₂	0.117	0.117	0.117	0.117	0.098	0.108	0.116	0.117

Six additional glasses were designed to evaluate possible alternatives for uranium in DWPF-type glasses used for variability studies and some scoping studies. Since special measures are necessary when working with uranium-containing glasses in the laboratory, it is desirable as a cost and time saving measure to find an alternative for uranium to support frit development efforts. Frits 532 and 533 were combined with SB5 Cases B, C and D at 38% WL to form these six glasses. Previous studies have suggested neodymium and hafnium as possible surrogates for uranium in nuclear waste glasses.^{3,4} For the first two glass compositions, neodymium was substituted for uranium and thorium on an oxide mass basis. For the next two glass compositions, hafnium was substituted for uranium and thorium on an oxide mass basis. Uranium and thorium were removed from the last two glass compositions and the concentrations of the remaining components were renormalized to 100%. The compositions of the six non-radioactive glasses are given in Table 3-4.

Table 3-4. Non-radioactive glass compositions with and without surrogates for uranium.

Glass ID	SB5-21	SB5-22	SB5-23	SB5-24	SB5-25	SB5-26
Frit ID	532	533	532	533	532	533
Sludge Type	Case B w/Nd	Case C w/Nd	Case D w/Hf	Case B w/Hf	Case C w/o U	Case D w/o U
Ag ₂ O	0.004	0.004	0.004	0.004	0.004	0.005
Al ₂ O ₃	11.009	9.460	7.947	11.009	10.305	8.714
B ₂ O ₃	8.680	9.920	8.680	9.920	8.680	9.920
BaO	0.039	0.043	0.046	0.039	0.047	0.050
CaO	1.917	0.747	2.041	0.677	2.054	0.878
CdO	0.023	0.025	0.027	0.023	0.027	0.030
Ce ₂ O ₃	0.141	0.155	0.167	0.141	0.169	0.183
CoO	0.009	0.010	0.011	0.009	0.011	0.012
Cr ₂ O ₃	0.142	0.156	0.167	0.142	0.170	0.183
CuO	0.005	0.005	0.005	0.005	0.005	0.005
Fe ₂ O ₃	8.834	9.745	10.447	8.834	10.615	11.454
HfO ₂	0.000	0.000	3.342	2.826	0.000	0.000
K ₂ O	0.025	0.027	0.030	0.025	0.030	0.033
La ₂ O ₃	0.062	0.068	0.073	0.062	0.074	0.080
Li ₂ O	3.720	3.100	3.720	3.100	3.720	3.100
MgO	0.447	0.494	0.529	0.447	0.538	0.580
MnO	1.847	2.038	2.184	1.847	2.220	2.395
Na ₂ O	13.776	14.154	13.650	14.396	14.355	15.168
Nd ₂ O ₃	2.826	3.117	0.000	0.000	0.000	0.000
NiO	1.037	1.144	1.227	1.037	1.247	1.345
P ₂ O ₅	0.201	0.221	0.236	0.201	0.240	0.259
PbO	0.008	0.009	0.010	0.008	0.010	0.011
SiO ₂	44.737	44.811	44.869	44.737	44.882	44.951
SO ₄	0.277	0.289	0.310	0.277	0.315	0.340
SrO	0.121	0.134	0.143	0.121	0.145	0.157
ThO ₂	0.000	0.000	0.000	0.000	0.000	0.000
TiO ₂	0.010	0.011	0.012	0.010	0.012	0.013
U ₃ O ₈	0.000	0.000	0.000	0.000	0.000	0.000
ZnO	0.006	0.006	0.007	0.006	0.007	0.008
ZrO ₂	0.098	0.108	0.116	0.098	0.118	0.127

3.2 Glass Fabrication

Each of the study glasses was prepared from the proper proportions of reagent-grade metal oxides, carbonates, boric acid and salts in 150 g batches.⁵ The raw materials were thoroughly mixed and placed into platinum/rhodium, 250 ml crucibles. The batch was placed into a high-temperature furnace at the target melt temperature of 1150 °C.⁶ The crucible was removed from the furnace after a one hour isothermal hold. The glass was poured onto a clean, stainless steel plate and allowed to air cool (quench). The glass pour patty was used as a sampling stock for the various property measurements, including chemical composition and durability testing.

Approximately 25 g of each glass was heat-treated to simulate cooling along the centerline of a DWPF-type canister⁷ to gauge the effects of thermal history on the product performance. This cooling schedule is referred to as the centerline canister cooling (CCC) curve. Visual observations on both quenched and CCC glasses were documented.

3.3 Property Measurements

This section provides a general discussion of the methodology used to perform X-ray diffraction (XRD) analyses, chemical composition analyses, and the Product Consistency Tests (PCT) on the study glasses.

3.3.1 X-Ray Diffraction Analysis

Representative samples of all the CCC glasses were submitted to SRNL Analytical Development for XRD analysis. Samples were run under conditions providing a detection limit of approximately 0.5 vol %. That is, if crystals (or undissolved batch material) were present at 0.5 vol % or greater, the diffractometer would not only be capable of detecting the crystals but would also allow for a qualitative determination of the type of crystal(s) present. Otherwise, a characteristically high background signal (amorphous hump) devoid of crystalline spectral peaks indicates that the glass product is free of crystallization, suggesting either a completely amorphous product or that the degree of crystallization is below the detection limit.

3.3.2 Compositional Analysis

To confirm that the as-fabricated glasses met the target compositions, a representative sample from each quenched glass was submitted to the SRNL Process Science Analytical Laboratory (PSAL) for chemical analysis under the auspices of two analytical plans, with the first plan⁸ covering the twenty uranium-containing glasses and the second plan⁹ covering the six non-radioactive glasses. The analytical plans were developed in such a way as to provide the opportunity to evaluate potential sources of bias and error. Glass standards were also intermittently measured to assess the performance of the analytical instrumentation over the course of these analyses.

3.3.3 Product Consistency Test (PCT)

The PCT Method-A¹⁰ was performed in triplicate on each quenched and CCC glass to assess chemical durability. Also included in the experimental test matrix was the Environmental Assessment (EA) benchmark glass,¹¹ the Approved Reference Material (ARM) glass, and blanks from the sample cleaning batch. Samples were ground, washed, and prepared following the standard procedure.¹⁰ Fifteen milliliters of Type-I ASTM water were added to 1.5 g of glass in stainless steel vessels. The vessels were closed, sealed, and placed in an oven at 90 ± 2 °C where the samples were maintained at temperature for 7 days. Once cooled, the resulting solutions were sampled (filtered and acidified), then labeled and analyzed by PSAL under the auspices of two analytical plans, one for the twenty uranium-containing glasses¹² and one for the six non-radioactive glasses.¹³ The aim of the plans was to provide an opportunity to assess the

consistency (repeatability) of the PCT and analytical procedures in evaluating the chemical durability of the glasses. Samples of a multi-element, standard solution were also included in the analytical plans as a check on the accuracy of the analytical instrumentation used for these measurements. Normalized release rates were calculated based on target, measured, and bias-corrected (bc) compositions using the average of the common logarithms of the leachate concentrations.

4.0 Results and Discussion

4.1 Homogeneity

Visual observations were recorded for each of the study glasses both after quenching and after the CCC heat treatment, as shown in Table 4-1. Descriptions such as clean or homogeneous indicate that no crystallization was apparent to the unaided eye. Descriptions such as streaks, film, sheen, haze, and dull or matte indicate that crystallization was visible on the surface of the glass.

XRD results are also summarized for each glass in Table 4-1. Only the CCC version of each glass was submitted for XRD analysis as the visual observations of the quenched glasses (and later the PCT performance) indicated that crystallization in the quenched glasses was unlikely. Trevorite (a spinel) was the only crystalline phase that was positively identified in a few of the study glasses. Spinel is not of concern as they have been shown to have little impact on the durability of high level waste glasses.¹⁴ In some cases, crystallization was visible on the surface of a CCC glass but not detected by XRD. It is likely that the volume fraction of crystallization in these glasses was below the XRD detection limit of about 0.5 vol%.

The crystallization behavior of the surrogate glasses (SB5-21 through SB5-26) was generally the same as that of their U_3O_8 -containing counterparts. There are two pairs that are exceptions: SB5-04 (amorphous by XRD) and SB5-24 (possible trevorite identified by XRD), along with SB5-07 (amorphous) and SB5-25 (trevorite). In these cases, the surrogate glasses (SB5-24 and SB5-25) appear to be more conservative (more prone to crystallization) than their U_3O_8 -containing counterparts. Again, additional data are required in order to determine the best method of removing the radioactive components from study glass compositions without influencing performance.

Table 4-1. Visual observations and XRD results for each of the study glasses.

Glass ID	Heat Treatment	Visual Observations	XRD Results
SB5-01	Quenched	Patty: black and shiny, homogeneous; Crucible: clean	-
	CCC	Surface: Dull film with crystals; Bulk: clean	Amorphous
SB5-02	Quenched	Patty: black and shiny with one tiny silver streak on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Mirror-like film; Bulk: clean	Amorphous
SB5-03	Quenched	Patty: Several silver spots on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Mirror-like film; Bulk: clean	Amorphous
SB5-04	Quenched	Patty: Tiny silvery specks on surface, possible crystals in bulk; Crucible: silvery specks on glass surface	-
	CCC	Surface: Shiny film; Bulk: clean	Amorphous
SB5-05	Quenched	Patty: Three tiny silver streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Dull, silvery film with crystals; Bulk: clean	Possible Bunsenite (NiO)
SB5-06	Quenched	Patty: Two tiny silvery streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Shiny, mirror-like film with crystals; Bulk: clean	Amorphous
SB5-07	Quenched	Patty: Two tiny silvery streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Mirror-like sheen; Bulk: clean	Amorphous
SB5-08	Quenched	Patty: Lots of silvery specks on surface, possible crystals in bulk; Crucible: clean	-
	CCC	Surface: Shiny film with crystals; Bulk: clean	Amorphous
SB5-09	Quenched	Patty: Tiny silvery specks and a few streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Shiny film with crystals; Bulk: clean	Amorphous
SB5-10	Quenched	Patty: A few tiny specks and streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Amorphous
SB5-11	Quenched	Patty: A few tiny streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Shiny, mirror-like sheen; Bulk: clean	Amorphous
SB5-12	Quenched	Patty: A few tiny, silvery specs and streaks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Mirror-like sheen; Bulk: clean	Amorphous
SB5-13	Quenched	Patty: A few tiny specks on surface, bulk clean; Crucible: clean	-
	CCC	Surface: Dull, matte with crystals; Bulk: clean	Amorphous
SB5-14	Quenched	Patty: Black, shiny and clean; Crucible: clean	-
	CCC	Surface: Shiny metallic haze; Bulk: clean	Amorphous
SB5-15	Quenched	Patty: Black, shiny and clean; Crucible: clean	-
	CCC	Surface: Shiny metallic haze; Bulk: clean	Trevorite (NiFe ₂ O ₄)
SB5-16	Quenched	Patty: Black, shiny and clean; Crucible: clean	-
	CCC	Surface: Silver, mirror-like metallic haze; Bulk: clean	Trevorite (NiFe ₂ O ₄)

Table 4-1. Visual observations and XRD results for each of the study glasses. (continued)

Glass ID	Heat Treatment	Visual Observations	XRD Results
SB5-17	Quenched	Patty: Several small silver spots on surface; Crucible: clean	-
	CCC	Surface: Silver, metallic haze with crystals; Bulk: clean	Trevorite (NiFe ₂ O ₄)
SB5-18	Quenched	Patty: Black, shiny and clean; Crucible: clean	-
	CCC	Surface: Metallic, mirror-like shine; Bulk: clean	Trevorite (NiFe ₂ O ₄)
SB5-19	Quenched	Patty: Four tiny spots of silver and a few metallic swirls; Crucible: clean	-
	CCC	Surface, Silvery, mirror-like shine with crystals; Bulk: clean	Amorphous
SB5-20	Quenched	Patty: Black, shiny and clean; Crucible: clean	-
	CCC	Surface: Mirror-like shine with a swirly haze; Bulk: clean	Amorphous
SB5-21	Quenched	Patty: Black, shiny and homogeneous; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Amorphous
SB5-22	Quenched	Patty: Black, shiny and homogeneous; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Amorphous
SB5-23	Quenched	Patty: Black, shiny and homogeneous; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Amorphous
SB5-24	Quenched	Patty: Black and shiny with four tiny metallic spots on surface; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Possible Trevorite (NiFe ₂ O ₄)
SB5-25	Quenched	Patty: Black and shiny, some pits on surface; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Trevorite (NiFe ₂ O ₄)
SB5-26	Quenched	Patty: Black and shiny with three very tiny silver spots on surface; Crucible: clean	-
	CCC	Surface: Mirror-like shine; Bulk: clean	Amorphous

4.2 A Statistical Review of the Chemical Composition Measurements

In this section, the measured versus targeted compositions of the study glasses are presented and compared. Glasses with identifiers SB5-1 through SB5-20 contained depleted uranium while the glasses with identifiers SB5-21 through SB5-26 were batched with the uranium normalized out of the compositions or with a surrogate such as neodymium or hafnium substituted for uranium. The identifiers and targeted compositions for these glasses are provided in Table A1 of Appendix A.

Two dissolution methods were utilized by PSAL in measuring the chemical compositions of the glasses for this study: lithium metaborate (LM) and sodium peroxide fusion (PF). For the plans in SRNL-SCS-2008-00003, the LM dissolution method was used to measure elemental concentrations of aluminum (Al), barium (Ba), calcium (Ca), cadmium (Cd), cerium (Ce), cobalt (Co), chromium (Cr), copper (Cu), iron (Fe), potassium (K), lanthanum (La), magnesium (Mg), manganese (Mn), sodium (Na), niobium (Nb), nickel (Ni), phosphorus (P), lead (Pb), sulfur (S), strontium (Sr), thorium (Th), titanium (Ti), uranium (U), zinc (Zn), and zirconium (Zr) concentrations. For the plans in SRNL-SCS-2008-00003, samples prepared by PF were measured for boron (B), lithium (Li), and silicon (Si) concentrations.

For the glasses of the plan in SRNL-SCS-2008-00043, the LM dissolution method was used to measure elemental concentrations of silver (Ag), aluminum (Al), barium (Ba), calcium (Ca), cerium (Ce), chromium (Cr), iron (Fe), hafnium (Hf), potassium (K), lanthanum (La), magnesium (Mg), manganese (Mn), sodium (Na), neodymium (Nd), nickel (Ni), lead (Pb), sulfur (S), silicon (Si), titanium (Ti), zinc (Zn), and zirconium (Zr), while samples from glasses prepared by PF dissolution were used to measure elemental concentrations of boron (B) and lithium (Li).

It should be noted that several of the elements in this list are not present or are present at very small concentrations. For each study glass, measurements were obtained from samples prepared in duplicate by each of these dissolution methods. All of the prepared samples were analyzed (twice for each element of interest) by Inductively Coupled Plasma – Atomic Emission Spectroscopy (ICP-AES) (with the instrumentation being re-calibrated between the duplicate analyses).

Table A2 in Appendix A provides the elemental concentration measurements derived from the samples prepared using LM in SRNL-SCS-2008-00003, and Table A3 in Appendix A provides the measurements derived from the samples prepared using PF in SRNL-SCS-2008-00003. The analytical plan and the analytical set are included as part of the information in these tables. Measurements for standards (Batch 1 and a uranium standard, U_{std}) that were included in the analytical plans along with the study glasses are also provided in these two tables.

Table A4 in Appendix A provides the elemental concentration measurements derived from the samples prepared using LM in SRNL-SCS-2008-00043, and Table A5 in Appendix A provides the measurements derived from the samples prepared using PF in SRNL-SCS-2008-00043. The analytical plan and the analytical set are included as part of the information in these tables. Measurements for standards (Batch 1 and U_{std}) that were included in the analytical plan along with the study glasses are also provided in these two tables.

The elemental concentrations were converted to oxide concentrations by multiplying the values for each element by the gravimetric factor for the corresponding oxide. During this process, an elemental concentration that was determined to be below the detection limit of the analytical

procedures used by the PSAL was reduced to half of that detection limit as the oxide concentration was determined.

In the sections that follow, the analytical sequences of the measurements are explored, the measurements of the standards are investigated and used for bias correction, the measurements for each glass are reviewed, the average chemical compositions (measured and bias-corrected) for each glass are determined, and comparisons are made between the measurements and the targeted compositions for the glasses.

4.2.1 *Measurements in Analytical Sequence*

Exhibit A1 in Appendix A provides plots of the measurements generated by the PSAL for samples by preparation method, by analytical plan, and by oxide. The plots are in analytical sequence with different symbols and colors being used to represent each of the study and standard glasses. These plots include all of the measurement data from Tables A2 through A5. Additional opportunities for review of these measurements are provided in the discussions that follow.

4.2.2 *Composition Measurements by Glass Identifier*

Exhibit A2 in Appendix A provides plots of the oxide concentration measurements by analytical plan, by preparation method by Glass ID (including Batch 1 and U_{std}). Different symbols and colors are used to represent the different glasses. These plots show the individual measurements across the duplicates of each preparation method and the two ICP-AES calibrations within each analytical set. A review of the plots presented in these exhibits reveals the repeatability of the four individual values for each oxide for each glass, although care should be taken in interpreting these results due to the varying scale of the y-axis depending on the concentration of each oxide. There is some scatter in the Fe_2O_3 and SiO_2 results, particularly for the glass standards. The low NiO value noted above was measured for one the U_{std} samples in SRNL-SCS-2008-00003. These issues will not impact the outcome of the study.

4.2.3 *Batch 1 and Uranium Standard Results*

In this section, the PSAL measurements of the chemical compositions of the Batch 1 and U_{std} glasses are reviewed. The measurements are investigated across the ICP-AES analytical blocks for each of the analytical sets for both SRNL-SCS-2008-00003 and SRNL-SCS-2008-00043.

Exhibit A3 in Appendix A provides statistical analyses of the Batch 1 and U_{std} (where included) results generated by both preparation methods by calibration block for each oxide of interest for each of the analytical plans. The results include analysis of variance (ANOVA) investigations looking for statistically significant differences between the means of these groups for each of the oxides for each of the standards. The results from the statistical tests for the Batch 1 standard for SRNL-SCS-2008-00003, Set 2 indicate that Al_2O_3 , CaO, Ce_2O_3 , CuO, K_2O , Na_2O , Nb_2O_5 , TiO_2 , and ZrO_2 have measurements with a significant ICP-AES calibration effect on the block averages at the 5% significance level. The results for U_{std} for SRNL-SCS-2008-00003, Set 2 indicate that Al_2O_3 , CaO, K_2O_3 , Li_2O , Na_2O , Nb_2O_5 , SiO_2 , TiO_2 , and U_3O_8 have measurements with a significant ICP-AES calibration effect on the block averages at the 5% significance level. The results from the statistical tests for the Batch 1 standard for SRNL-SCS-2008-00003, Set 3 indicate that Al_2O_3 , Ce_2O_3 , K_2O , and Nb_2O_5 have measurements with a significant ICP-AES calibration effect on the block averages at the 5% significance level. The results for U_{std} for SRNL-SCS-2008-00003, Set 3 indicate that Al_2O_3 , K_2O_3 , Na_2O , Nb_2O_5 , and U_3O_8 have measurements with a significant ICP-AES calibration effect on the block averages at the 5% significance level. The results from the statistical tests for the Batch 1 standard for SRNL-SCS-2008-00043 indicate that BaO, Cr_2O_3 , Li_2O , MgO, TiO_2 and ZrO_2 have measurements with a

significant ICP-AES calibration effect on the block averages at the 5% significance level. The reference values for the oxide concentrations of the standard are given in the header for each set of measurements in the exhibit.

Some of the results from these statistical analyses provide incentive for adjusting the measurements by the effects of the ICP-AES calibration. Therefore, the oxide measurements of the study glasses are to be bias corrected for the effect of the ICP-AES calibration on each of the analytical blocks and sub-blocks. The basis for this bias correction is presented as part of Exhibit A3 – the average measurement for Batch 1 for each ICP-AES block/sub-block for Al₂O₃, B₂O₃, BaO, CaO, Cr₂O₃, CuO, Fe₂O₃, Li₂O, MgO, MnO, Na₂O, NiO, SiO₂, and TiO₂ and the average measurement for U_{std} for each ICP-AES set/block for U₃O₈. The Batch 1 results served as the basis for bias correcting all of the oxides (that were bias corrected) except uranium. The U_{std} results were used to bias correct for uranium. For the other oxides, the Batch 1 results were used to conduct the bias correction as long as the reference value for the oxide concentration in the Batch 1 glass was greater than or equal to 0.1 wt%. Thus, applying this approach and based upon the information in the exhibits, the Batch 1 results were used to bias correct the Al₂O₃, B₂O₃, BaO, CaO, Cr₂O₃, CuO, Fe₂O₃, K₂O, Li₂O, MgO, MnO, Na₂O, Nd₂O₃, NiO, SiO₂, and TiO₂ measurements, and the U_{std} values were used to bias correct the U₃O₈. No bias correction was conducted for Ce₂O₃, La₂O₃, PbO, SO₄²⁻, or ZrO₂.

The bias correction was conducted as follows: For each oxide, let \bar{a}_{ij} be the average measurement for the i^{th} oxide at analytical block j for Batch 1 (or U_{std} for uranium), and let t_i be the reference value for the i^{th} oxide for Batch 1 (or for U_{std} if uranium). (The averages and reference values are provided in Exhibits A3 and A4 in Appendix A.) Let \bar{c}_{ijk} be the average measurement for the i^{th} oxide at analytical block j for the k^{th} glass. The bias adjustment was conducted as follows:

$$\bar{c}_{ijk} \cdot \left(1 - \frac{\bar{a}_{ij} - t_i}{\bar{a}_{ij}} \right) = \bar{c}_{ijk} \cdot \frac{t_i}{\bar{a}_{ij}}$$

Bias-corrected measurements are indicated by a “bc” suffix, and such adjustments were performed for all of the oxides of this study except for Ce₂O₃, La₂O₃, PbO, SO₄²⁻, and ZrO₂. Both measured and measured-bc values are included in the discussion that follows. In these discussions, the original values for Ce₂O₃, La₂O₃, PbO, SO₄²⁻, and ZrO₂ are included for completeness (e.g., to allow a sum of oxides to be computed for the bias-corrected results). These bias-corrected values are the same as the original Ce₂O₃, La₂O₃, PbO, SO₄²⁻, and ZrO₂ values.

4.2.4 Composition Measurements by Glass Identifier with Targeted Compositions

To finalize the measurements that were used to characterize the compositions of the study glasses, Exhibit A4 in Appendix A was prepared. This exhibit provides plots of the oxide concentration measurements by Glass ID (including Batch 1 and U_{std}) by Lab ID for the LM and PF preparation methods for each set of analyses. The plots are grouped by analytical plan and preparation method, and they show the individual measurements across the duplicates of each preparation method and the replicate ICP-AES calibrations. A review of the plots presented in these exhibits reveals the repeatability of the individual oxide values for each glass. The targeted concentration for each of the oxides for each of the study glasses and the reference values for the standards are also provided as part of these plots.

4.2.5 Measured versus Targeted Compositions

The measurements for each oxide for each glass were averaged to determine a representative chemical composition for each glass. These determinations were conducted both for the measured and for the bias-corrected data. A sum of oxides was also computed for each glass based upon both the measured and bias-corrected values. Exhibit A5 in Appendix A provides plots showing results for each glass for each oxide to help highlight the comparisons among the measured, bias-corrected, and targeted values. These plots are grouped by analytical plan and, where appropriate, by analytical set.

Some observations from the plots of Exhibit A5 are offered: For the SRNL-SCS-2008-00003 results, the measured Fe₂O₃ (set 2), NiO (sets 2 and 3), and SiO₂ (sets 2 and 3) values for most of the study glasses fall below their targeted values. For the SRNL-SCS-2008-00043 results, the SiO₂ values for most of the study glasses fall above their targeted values. These issues are not expected to impact the outcome of the study.

Table A6 in Appendix A provides a summary of the average compositions as well as the targeted compositions and some associated differences and relative differences. Notice that the targeted sums of oxides for the standard glasses do not sum to 100% due to an incomplete coverage of the oxides in the Batch 1 and U_{std} glasses. All of the sums of oxides (both measured and bias-corrected) for the study glasses fall within the interval of 95 to 105 wt%. Entries in Table A5 show the relative differences between the measured or bias-corrected values and the targeted values. These differences are shaded when they are greater than or equal to 5%. Overall, these comparisons between the measured and targeted compositions suggest only minor difficulties in meeting the targeted compositions for some of the oxides for some of the glasses.

4.2.6 Assessment of SO₄²⁻ Values

The targeted SO₄²⁻ concentrations for the study glasses fell within the interval of 0.277 to 0.547 wt%. Figure 4-1 provides a plot of the measured versus targeted SO₄²⁻ values for each of the glasses over all the analytical plans (this plot is a compilation of three of the plots in Exhibit A5).

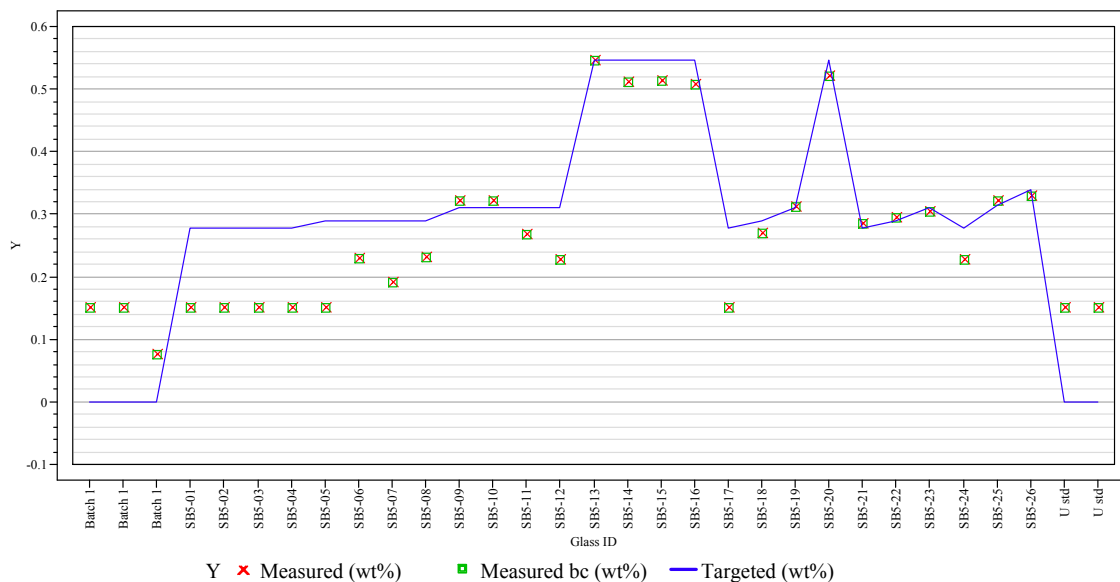


Figure 4-1. SO₄²⁻ Values for Glasses in the Analytical Plan by Glass ID.

Since Batch 1 and the U_{std} standard contain no SO₄²⁻, their measurements are below the detection limit for sulfur (see Tables A2 and A4 in Appendix A). For many of the study glasses (even those with the highest targeted SO₄²⁻ concentrations), the average, measured values fall near the targeted concentrations. Some volatilization of SO₄²⁻ may have occurred during melting of the glasses where the measured SO₄²⁻ concentration falls below the target value. No issues with sulfur retention are apparent in the frit/sludge combinations studied here.

4.2.7 MAR Assessment of the SB4/Second Decant VS Glasses

Another assessment that can be made for these initial SB5 study glasses is how well they satisfy the Measurement Acceptability Region (MAR) criteria of the DWPF Product Composition Control System (PCCS). Glasses SB5-21 through SB5-26 are not incorporated in this evaluation since Nd₂O₃ and HfO₂ are not included in the current calculations conducted by PCCS.

Table 4-2 provides the outcome of the MAR assessment. The columns in the table give the glass identifier, compositional view, the free energy of hydration value for boron (B ΔG_p Value), the predicted normalized leachate for boron (NL [B]), the predicted liquidus temperature (T_L Pred), the viscosity prediction (Visc Pred), the nepheline discriminator value (Neph), and the overall MAR assessment outcome excluding any limitation on Na₂SO₄ concentration. All but one of the study glasses would pass the PCCS MAR and be deemed processable by and acceptable for the DWPF. Glass SB5-04, based on the measured bc composition, fails the nepheline discriminator criterion. This is not considered to be a critical issue since, as will be shown in the following section, the PCT response for this glass is very acceptable.

Table 4-2. Results of MAR Assessment of SB4 VS Glasses for Measured, Bias-Corrected, and Targeted Compositional Views

Glass ID	Compositional View	B ΔG_p (kcal / 100 g glass)	NL [B] (g/L)	TL Pred (°C)	Visc Pred (P)	Neph	MAR Status
SB5-01	Measured	-9.640	0.70	939.7	61.4	0.649	Acceptable
SB5-02	Measured	-9.389	0.63	939.6	56.4	0.653	Acceptable
SB5-03	Measured	-9.317	0.61	952.0	61.9	0.644	Acceptable
SB5-04	Measured	-9.591	0.69	944.5	50.2	0.633	Acceptable
SB5-05	Measured	-10.380	0.95	952.8	44.1	0.659	Acceptable
SB5-06	Measured	-10.101	0.85	951.1	46.8	0.662	Acceptable
SB5-07	Measured	-9.719	0.72	971.5	48.0	0.663	Acceptable
SB5-08	Measured	-9.677	0.71	974.1	49.3	0.657	Acceptable
SB5-09	Measured	-10.894	1.18	961.9	37.5	0.675	Acceptable
SB5-10	Measured	-10.515	1.01	954.6	43.1	0.684	Acceptable
SB5-11	Measured	-10.231	0.90	973.5	40.1	0.678	Acceptable
SB5-12	Measured	-10.150	0.87	981.3	41.5	0.675	Acceptable
SB5-13	Measured	-11.994	1.87	930.7	31.6	0.679	Acceptable
SB5-14	Measured	-11.638	1.61	916.8	31.6	0.681	Acceptable
SB5-15	Measured	-11.583	1.58	926.1	29.3	0.670	Acceptable
SB5-16	Measured	-11.215	1.35	939.0	30.5	0.667	Acceptable
SB5-17	Measured	-9.296	0.61	942.0	38.4	0.662	Acceptable
SB5-18	Measured	-10.497	1.00	953.7	37.2	0.657	Acceptable
SB5-19	Measured	-11.149	1.31	958.3	32.1	0.656	Acceptable
SB5-20	Measured	-10.213	0.89	962.9	51.3	0.685	Acceptable
SB5-01	Measured bc	-9.897	0.78	939.0	56.6	0.640	Acceptable
SB5-02	Measured bc	-9.631	0.70	939.4	51.9	0.644	Acceptable
SB5-03	Measured bc	-9.323	0.61	956.9	56.3	0.641	Acceptable
SB5-04	Measured bc	-9.867	0.77	943.3	45.3	0.624	Neph
SB5-05	Measured bc	-10.661	1.07	952.4	40.2	0.650	Acceptable
SB5-06	Measured bc	-10.067	0.84	956.7	43.3	0.660	Acceptable
SB5-07	Measured bc	-9.960	0.80	970.9	44.3	0.654	Acceptable
SB5-08	Measured bc	-9.661	0.71	980.3	45.0	0.655	Acceptable
SB5-09	Measured bc	-10.941	1.21	966.1	33.3	0.672	Acceptable
SB5-10	Measured bc	-10.486	1.00	960.4	39.7	0.682	Acceptable
SB5-11	Measured bc	-10.565	1.03	972.5	35.5	0.669	Acceptable
SB5-12	Measured bc	-10.459	0.99	980.5	37.1	0.666	Acceptable
SB5-13	Measured bc	-11.974	1.85	930.5	28.4	0.674	Acceptable
SB5-14	Measured bc	-11.688	1.65	915.3	27.4	0.676	Acceptable
SB5-15	Measured bc	-11.733	1.68	931.0	27.2	0.666	Acceptable
SB5-16	Measured bc	-11.340	1.42	943.7	28.4	0.663	Acceptable
SB5-17	Measured bc	-9.337	0.62	946.3	37.1	0.657	Acceptable
SB5-18	Measured bc	-10.448	0.98	953.5	33.7	0.651	Acceptable
SB5-19	Measured bc	-11.184	1.33	963.5	31.3	0.652	Acceptable
SB5-20	Measured bc	-10.209	0.89	963.3	46.1	0.679	Acceptable
SB5-01	Targeted	-9.877	0.77	956.0	55.3	0.647	Acceptable
SB5-02	Targeted	-9.623	0.70	954.9	55.5	0.650	Acceptable
SB5-03	Targeted	-9.487	0.66	966.8	54.2	0.643	Acceptable
SB5-04	Targeted	-9.400	0.63	965.1	55.2	0.638	Acceptable
SB5-05	Targeted	-10.255	0.91	976.9	46.7	0.664	Acceptable
SB5-06	Targeted	-10.001	0.81	975.9	47.0	0.667	Acceptable
SB5-07	Targeted	-9.865	0.77	989.4	45.6	0.661	Acceptable
SB5-08	Targeted	-9.778	0.74	988.2	46.5	0.655	Acceptable
SB5-09	Targeted	-10.924	1.20	980.9	37.8	0.678	Acceptable
SB5-10	Targeted	-10.670	1.08	980.2	38.1	0.681	Acceptable
SB5-11	Targeted	-10.533	1.02	994.9	36.8	0.675	Acceptable
SB5-12	Targeted	-10.446	0.98	994.3	37.5	0.669	Acceptable
SB5-13	Targeted	-12.076	1.94	924.6	28.9	0.674	Acceptable
SB5-14	Targeted	-11.822	1.74	924.0	29.3	0.677	Acceptable
SB5-15	Targeted	-11.685	1.64	937.7	28.0	0.671	Acceptable
SB5-16	Targeted	-11.598	1.59	937.6	28.6	0.665	Acceptable
SB5-17	Targeted	-9.136	0.57	969.8	39.0	0.664	Acceptable
SB5-18	Targeted	-10.590	1.04	966.3	33.1	0.655	Acceptable
SB5-19	Targeted	-11.457	1.50	969.6	30.0	0.654	Acceptable
SB5-20	Targeted	-10.485	1.00	959.9	44.0	0.677	Acceptable

4.3 A Statistical Review of the PCT Results for These Initial SB5 Glasses

Table B1 in Appendix B provides the elemental leachate concentration measurements (column headings include “ar,” for as received) determined by the PSAL for the solution samples generated by the PCTs for each for analytical plan (2 sets for SRNL-SCS-2008-00005 and 1 set for SRNL-SCS-2008-00042). One of the quality control checkpoints for the PCT procedure is solution-weight loss over the course of the 7-day test. None of these PCT results indicated a solution-weight loss problem. Any measurement in Table B1 below the detection limit of the analytical procedure (indicated by a “<”) was replaced by one half of the detection limit in subsequent analyses. In addition to adjustments for detection limits, the values were adjusted for the dilution factors: the values for the study glasses, the blanks, and the ARM glass in Table B1 were multiplied by 1.6667 to determine the values in parts per million (ppm) and the values for EA were multiplied by 16.6667. The last four columns of Table B1 provide the resulting measurements.

In the following sections,

- the analytical sequence of the measurements is explored,
- the measurements of the standards are investigated and used to assess the overall accuracy of the measurement process,
- the measurements for each glass are reviewed,
- plots are provided that explore the effects of heat treatment on the PCTs for these glasses,
- the PCTs are normalized using the compositions (targeted, measured, and bias-corrected) presented in Table A5, and
- the normalized PCTs of glasses SB5-01 through SB4-20 are compared to durability predictions for these compositions generated from the current DWPF models.¹⁵

4.3.1 Measurements in Analytical Sequence

Exhibit B1 in Appendix B provides plots of the leachate concentrations (as common logarithms of the ppm values) in analytical sequence as generated by the PSAL for all of the measurements from Table B1 by analytical set within each analytical plan. An “x” is used to represent a value for a standard (EA, ARM, blank, or the solution standard). A red square (■) is used to represent a CCC result for a study glass, and a “+” is used to represent a quenched result for a study glass.

4.3.2 Results for the Samples of the Multi-Element Solution Standard

Exhibit B2 in Appendix B provides analyses of the PSAL measurements of the samples of the multi-element solution standard by ICP-AES calibration block within analytical plan and set. An ANOVA investigating for statistically significant differences among the block averages for these samples for each element of interest is included in these exhibits. There was no indication of a statistically significant (at a 5% level) difference among the averages of these measurements for any of the elements of interest except for B and Si in SRNL-SCS-2008-00042 (set u). However, averaging the ppm values for each set of triplicates helps to minimize the impact of any potential ICP-AES effects.

Table 4-3 summarizes the average measurements and the reference values for the four primary elements of interest. The results indicate consistent and accurate measurements from the PSAL processes used to conduct these analyses.

Table 4-3. Results from Samples of the Multi-Element Solution Standard

Analytical Plan	Analytical Set	Analytical Block	Avg B	Avg Li	Avg Na	Avg Si
SRNL-SCS-2008-00005	q	1	20.20	9.95	81.20	49.37
SRNL-SCS-2008-00005	q	2	20.27	9.85	80.13	50.63
SRNL-SCS-2008-00005	q	3	19.40	9.88	80.43	50.40
SRNL-SCS-2008-00005	r	1	20.13	9.80	79.27	50.00
SRNL-SCS-2008-00005	r	2	20.40	9.79	80.10	52.00
SRNL-SCS-2008-00005	r	3	20.83	10.00	80.73	51.50
SRNL-SCS-2008-00005	s	1	19.70	9.78	79.87	50.93
SRNL-SCS-2008-00005	s	2	19.03	9.57	80.17	48.70
SRNL-SCS-2008-00005	s	3	19.33	9.67	81.00	49.90
SRNL-SCS-2008-00042	u	1	19.37	9.99	83.27	50.73
SRNL-SCS-2008-00042	u	2	21.33	10.15	82.87	53.70
SRNL-SCS-2008-00042	u	3	20.00	10.03	83.43	51.60
Grand Average			20.00	9.87	81.04	50.79
Reference Value			20	10	81	50
% difference			0.00%	-1.29%	0.05%	1.58%

4.3.3 Measurements by Glass Identifier

Exhibit B3 in Appendix B provide plots of the leachate concentrations for each type of submitted sample by analytical plan and set: the study glasses by heat treatment and the standards (EA, ARM, the multi-element solution standard, and blanks). Exhibit B4 in Appendix B provide plots of the leachate concentrations for the PCT results of just the study glasses by heat treatment grouped by analytical plan and set. These plots allow for the assessment of the repeatability of the measurements, which suggests some scatter in the triplicate values for some analytes for some of the glasses. Also, note the small differences between the values for the two heat treatments for the study glasses. More will be said regarding comparisons between the heat treatments in the discussions that follow.

4.3.4 Normalized PCT Results

PCT leachate concentrations are typically normalized using the cation composition (expressed as a weight percent) in the glass to obtain a grams-per-liter (g/L) leachate concentration. The normalization of the PCT results is usually conducted using the measured compositions of the glasses. This is the preferred normalization process for the PCTs. For completeness, the targeted cation and the bias-corrected cation compositions were also used to conduct this normalization.

As is the usual convention, the common logarithm of the normalized PCT (normalized leachate, NL) for each element of interest was determined and used for comparison. To accomplish this computation, one must:

1. Determine the common logarithm of the elemental parts per million (ppm) leachate concentration for each of the triplicates and each of the elements of interest (these values are provided in Table B1 of Appendix B),

2. Average the common logarithms over the triplicates for each element of interest, and then,

Normalizing Using Measured Composition (preferred method),

3. Subtract a quantity equal to 1 plus the common logarithm of the average cation measured concentration (expressed as a weight percent of the glass) from the average computed in step 2.

Or Normalizing Using Target Composition,

3. Subtract a quantity equal to 1 plus the common logarithm of the target cation concentration (expressed as a weight percent of the glass) from the average computed in step 2.

Or Normalizing Using Measured Bias-Corrected Composition,

3. Subtract a quantity equal to 1 plus the common logarithm of the measured bias-corrected cation concentration (expressed as a weight percent of the glass) from the average computed in step 2.

Exhibit B5 in Appendix B provides scatter plots for these results by analytical plan and set and offers an opportunity to investigate the consistency in the leaching across the elements for the glasses of this study. All combinations of the normalizations of the PCTs (i.e., those generated using the targeted, measured, and bias-corrected compositional views) and both heat treatments are represented in the series of scatter plots. Consistency in the leaching across the elements is typically demonstrated by a high degree of linear correlation among the values for pairs of these elements. The smallest correlation in these plot is that for B and Li (SRNL-SCS-2008-00005, Set s), with a value of ~95%, indicating a high degree of correlation for all of the measurements.

Table 4-4 summarizes the normalized PCT results for the glasses of this study. The glasses are listed by glass identifier. Also, note that the nepheline discriminator value is shown for each glass (based upon the compositional view indicated) and that a pairing value is indicated where a surrogate was developed for the study glass. The normalized leachate values for B, Li, Na and Si for all of the study glasses are well below those of the EA benchmark glass, regardless of heat treatment or compositional view. This indicates that all of the glasses have very acceptable durability performance.

Table 4-4. Normalized PCTs by Glass ID and Compositional View for Initial SB5 Study Glasses.

Glass ID	Pair	Heat Treatment	Composition View	Nepheline Discriminator	ΔG_p	log NL [B (g/L)]	log NL [Li (g/L)]	log NL [Na (g/L)]	log NL [Si (g/L)]	NL B (g/L)	NL Li (g/L)	NL Na (g/L)	NL Si (g/L)
ARM	0	ref	reference	0.753	-8.905	-0.3244	-0.2494	-0.3000	-0.5647	0.474	0.563	0.501	0.272
ARM	0	ref	reference	0.753	-8.905	-0.3363	-0.2554	-0.3003	-0.5645	0.461	0.555	0.501	0.273
ARM	0	ref	reference	0.753	-8.905	-0.2241	-0.1742	-0.2291	-0.4928	0.597	0.670	0.590	0.322
EA	0	ref	reference	0.704	-14.941	1.2409	0.9589	1.1084	0.5969	17.413	9.096	12.835	3.953
EA	0	ref	reference	0.704	-14.941	1.2285	0.9668	1.1265	0.5869	16.922	9.264	13.381	3.863
EA	0	ref	reference	0.704	-14.941	1.2686	0.9967	1.1474	0.6196	18.562	9.925	14.040	4.165
SB5-01	0	CCC	Measured	0.649	-9.640	-0.2900	-0.2003	-0.1761	-0.4738	0.513	0.630	0.667	0.336
SB5-02	0	CCC	Measured	0.653	-9.389	-0.2729	-0.2157	-0.1805	-0.4121	0.533	0.609	0.660	0.387
SB5-03	1	CCC	Measured	0.644	-9.318	-0.2451	-0.0518	-0.1280	-0.3543	0.569	0.888	0.745	0.442
SB5-04	4	CCC	Measured	0.633	-9.592	-0.2600	-0.2256	-0.2450	-0.3972	0.550	0.595	0.569	0.401
SB5-05	0	CCC	Measured	0.659	-10.381	-0.2090	-0.1386	-0.1015	-0.4001	0.618	0.727	0.792	0.398
SB5-06	0	CCC	Measured	0.662	-10.102	-0.1859	-0.2895	-0.2149	-0.4534	0.652	0.513	0.610	0.352
SB5-07	5	CCC	Measured	0.663	-9.719	-0.2380	-0.1953	-0.1756	-0.4272	0.578	0.638	0.667	0.374
SB5-08	2	CCC	Measured	0.657	-9.677	-0.2371	-0.2161	-0.2241	-0.4185	0.579	0.608	0.597	0.382
SB5-09	0	CCC	Measured	0.675	-10.894	-0.1286	-0.0740	-0.0358	-0.3381	0.744	0.843	0.921	0.459
SB5-10	0	CCC	Measured	0.684	-10.515	-0.1330	-0.1128	-0.0802	-0.3364	0.736	0.771	0.831	0.461
SB5-11	3	CCC	Measured	0.678	-10.230	-0.1438	-0.1264	-0.1084	-0.3544	0.718	0.747	0.779	0.442
SB5-12	6	CCC	Measured	0.675	-10.150	-0.1970	-0.1774	-0.1350	-0.3739	0.635	0.665	0.733	0.423
SB5-13	0	CCC	Measured	0.679	-11.994	-0.0699	-0.0285	0.0342	-0.2914	0.851	0.937	1.082	0.511
SB5-14	0	CCC	Measured	0.681	-11.636	-0.0846	-0.0732	-0.0226	-0.2992	0.823	0.845	0.949	0.502
SB5-15	0	CCC	Measured	0.670	-11.582	-0.1203	-0.1197	-0.0875	-0.3579	0.758	0.759	0.818	0.439
SB5-16	0	CCC	Measured	0.667	-11.215	-0.1298	-0.1572	-0.1208	-0.3671	0.742	0.696	0.757	0.429
SB5-17	0	CCC	Measured	0.662	-9.296	-0.1868	-0.1585	-0.2217	-0.3220	0.650	0.694	0.600	0.476
SB5-18	0	CCC	Measured	0.657	-10.498	-0.1586	-0.1553	-0.1335	-0.3543	0.694	0.699	0.735	0.442
SB5-19	0	CCC	Measured	0.656	-11.150	-0.1625	-0.1917	-0.1392	-0.3695	0.688	0.643	0.726	0.427
SB5-20	0	CCC	Measured	0.685	-10.212	-0.1851	-0.1976	-0.2101	-0.4249	0.653	0.635	0.616	0.376
SB5-21	1	CCC	Measured	0.642	-9.708	-0.2493	-0.1962	-0.1879	-0.4696	0.563	0.636	0.649	0.339
SB5-22	2	CCC	Measured	0.662	-9.932	-0.2363	-0.1978	-0.2073	-0.4581	0.580	0.634	0.620	0.348
SB5-23	3	CCC	Measured	0.677	-10.373	-0.2569	-0.1955	-0.1905	-0.4696	0.553	0.638	0.645	0.339
SB5-24	4	CCC	Measured	0.639	-9.306	-0.3889	-0.3031	-0.3382	-0.5268	0.408	0.498	0.459	0.297
SB5-25	5	CCC	Measured	0.651	-9.850	-0.2787	-0.2055	-0.1812	-0.4430	0.526	0.623	0.659	0.361
SB5-26	6	CCC	Measured	0.657	-10.757	-0.2250	-0.2094	-0.1811	-0.3981	0.596	0.617	0.659	0.400
SB5-01	0	quenched	Measured	0.649	-9.640	-0.2846	-0.2039	-0.1474	-0.4689	0.519	0.625	0.712	0.340
SB5-02	0	quenched	Measured	0.653	-9.389	-0.2757	-0.2265	-0.1608	-0.4173	0.530	0.594	0.691	0.383
SB5-03	1	quenched	Measured	0.644	-9.318	-0.2597	-0.2048	-0.1994	-0.4456	0.550	0.624	0.632	0.358
SB5-04	4	quenched	Measured	0.633	-9.592	-0.2461	-0.2281	-0.2029	-0.4090	0.567	0.591	0.627	0.390
SB5-05	0	quenched	Measured	0.659	-10.381	-0.2205	-0.1510	-0.0845	-0.4079	0.602	0.706	0.823	0.391

Table 4-4. Normalized PCTs by Glass ID and Compositional View for Initial SB5 Study Glasses. (continued)

Class ID	Pair	Heat Treatment	Composition View	Nepheline Discriminator	ΔG_p	log NL [B (g/L)]	log NL [Li (g/L)]	log NL [Na (g/L)]	log NL [Si (g/L)]	NL B (g/L)	NL Li (g/L)	NL Na (g/L)	NL Si (g/L)
SB5-06	0	quenched	Measured	0.662	-10.102	-0.1989	-0.1602	-0.1004	-0.3787	0.633	0.692	0.794	0.418
SB5-07	5	quenched	Measured	0.663	-9.719	-0.2042	-0.1841	-0.1465	-0.4092	0.625	0.654	0.714	0.390
SB5-08	2	quenched	Measured	0.657	-9.677	-0.2413	-0.2142	-0.2035	-0.4161	0.574	0.611	0.626	0.384
SB5-09	0	quenched	Measured	0.675	-10.894	-0.1081	-0.0660	0.0129	-0.3250	0.780	0.859	1.030	0.473
SB5-10	0	quenched	Measured	0.684	-10.515	-0.0945	-0.1143	-0.0389	-0.3380	0.805	0.769	0.914	0.459
SB5-11	3	quenched	Measured	0.678	-10.230	-0.1711	-0.1452	-0.1017	-0.3775	0.674	0.716	0.791	0.419
SB5-12	6	quenched	Measured	0.675	-10.150	-0.1860	-0.1759	-0.1302	-0.3858	0.652	0.667	0.741	0.411
SB5-13	0	quenched	Measured	0.679	-11.994	-0.0507	-0.0198	0.0616	-0.2793	0.890	0.956	1.152	0.526
SB5-14	0	quenched	Measured	0.681	-11.636	-0.0677	-0.0887	-0.0089	-0.2854	0.856	0.815	0.980	0.518
SB5-15	0	quenched	Measured	0.670	-11.582	-0.0699	-0.1028	-0.0486	-0.3220	0.851	0.789	0.894	0.476
SB5-16	0	quenched	Measured	0.667	-11.215	-0.0910	-0.1343	-0.0732	-0.3500	0.811	0.734	0.845	0.447
SB5-17	0	quenched	Measured	0.662	-9.296	-0.1937	-0.1547	-0.2055	-0.3373	0.640	0.700	0.623	0.460
SB5-18	0	quenched	Measured	0.657	-10.498	-0.1718	-0.1757	-0.1319	-0.3711	0.673	0.667	0.738	0.425
SB5-19	0	quenched	Measured	0.656	-11.150	-0.1289	-0.1730	-0.1016	-0.3561	0.743	0.671	0.791	0.440
SB5-20	0	quenched	Measured	0.685	-10.212	-0.1920	-0.2058	-0.1934	-0.4392	0.643	0.623	0.641	0.364
SB5-21	1	quenched	Measured	0.642	-9.708	-0.2469	-0.1971	-0.1503	-0.4616	0.566	0.635	0.707	0.345
SB5-22	2	quenched	Measured	0.662	-9.932	-0.2447	-0.2080	-0.1900	-0.4635	0.569	0.620	0.646	0.344
SB5-23	3	quenched	Measured	0.677	-10.373	-0.2658	-0.2165	-0.1856	-0.4851	0.542	0.607	0.652	0.327
SB5-24	4	quenched	Measured	0.639	-9.306	-0.3720	-0.2911	-0.2992	-0.5202	0.425	0.512	0.502	0.302
SB5-25	5	quenched	Measured	0.651	-9.850	-0.2449	-0.1984	-0.1508	-0.4263	0.569	0.633	0.707	0.375
SB5-26	6	quenched	Measured	0.657	-10.757	-0.2324	-0.2346	-0.1645	-0.4148	0.586	0.583	0.685	0.385
SB5-01	0	CCC	Measured bc	0.640	-9.897	-0.2847	-0.2155	-0.1847	-0.4687	0.519	0.609	0.654	0.340
SB5-02	0	CCC	Measured bc	0.644	-9.631	-0.2676	-0.2309	-0.1890	-0.4071	0.540	0.588	0.647	0.392
SB5-03	1	CCC	Measured bc	0.641	-9.323	-0.2473	-0.0743	-0.1201	-0.3453	0.566	0.843	0.758	0.452
SB5-04	4	CCC	Measured bc	0.624	-9.867	-0.2623	-0.2481	-0.2535	-0.3921	0.547	0.565	0.558	0.405
SB5-05	0	CCC	Measured bc	0.650	-10.661	-0.2037	-0.1537	-0.1101	-0.3951	0.626	0.702	0.776	0.403
SB5-06	0	CCC	Measured bc	0.660	-10.067	-0.1806	-0.3047	-0.2072	-0.4444	0.660	0.496	0.621	0.359
SB5-07	5	CCC	Measured bc	0.654	-9.961	-0.2327	-0.2104	-0.1842	-0.4222	0.585	0.616	0.654	0.378
SB5-08	2	CCC	Measured bc	0.655	-9.661	-0.2393	-0.2386	-0.2163	-0.4094	0.576	0.577	0.608	0.390
SB5-09	0	CCC	Measured bc	0.672	-10.941	-0.1309	-0.0965	-0.0279	-0.3291	0.740	0.801	0.938	0.469
SB5-10	0	CCC	Measured bc	0.682	-10.486	-0.1277	-0.1280	-0.0723	-0.3273	0.745	0.745	0.847	0.471
SB5-11	3	CCC	Measured bc	0.669	-10.565	-0.1460	-0.1490	-0.1169	-0.3494	0.715	0.710	0.764	0.447
SB5-12	6	CCC	Measured bc	0.666	-10.460	-0.1992	-0.1999	-0.1436	-0.3689	0.632	0.631	0.718	0.428
SB5-13	0	CCC	Measured bc	0.674	-11.974	-0.0582	-0.0393	0.0422	-0.2755	0.875	0.914	1.102	0.530
SB5-14	0	CCC	Measured bc	0.676	-11.688	-0.0928	-0.0876	-0.0147	-0.2833	0.808	0.817	0.967	0.521
SB5-15	0	CCC	Measured bc	0.666	-11.732	-0.1286	-0.1342	-0.0896	-0.3551	0.744	0.734	0.814	0.441
SB5-16	0	CCC	Measured bc	0.663	-11.340	-0.1380	-0.1716	-0.1229	-0.3642	0.728	0.674	0.754	0.432
SB5-17	0	CCC	Measured bc	0.657	-9.337	-0.1751	-0.1693	-0.2238	-0.3193	0.668	0.677	0.597	0.479

Table 4-4. Normalized PCTs by Glass ID and Compositional View for Initial SB5 Study Glasses. (continued)

Class ID	Pair	Heat Treatment	Composition View	Nepheline Discriminator	ΔG_p	log NL [B (g/L)]	log NL [Li (g/L)]	log NL [Na (g/L)]	log NL [Si (g/L)]	NL B (g/L)	NL Li (g/L)	NL Na (g/L)	NL Si (g/L)
SB5-18	0	CCC	Measured bc	0.651	-10.448	-0.1471	-0.1661	-0.1254	-0.3384	0.713	0.682	0.749	0.459
SB5-19	0	CCC	Measured bc	0.652	-11.183	-0.1509	-0.2025	-0.1413	-0.3666	0.706	0.627	0.722	0.430
SB5-20	0	CCC	Measured bc	0.679	-10.209	-0.1933	-0.2120	-0.2022	-0.4091	0.641	0.614	0.628	0.390
SB5-21	1	CCC	Measured bc	0.644	-9.370	-0.2416	-0.1974	-0.1780	-0.4706	0.573	0.635	0.664	0.338
SB5-22	2	CCC	Measured bc	0.664	-9.602	-0.2286	-0.1990	-0.1973	-0.4591	0.591	0.632	0.635	0.347
SB5-23	3	CCC	Measured bc	0.679	-10.025	-0.2492	-0.1967	-0.1805	-0.4706	0.563	0.636	0.660	0.338
SB5-24	4	CCC	Measured bc	0.641	-8.922	-0.3813	-0.3043	-0.3282	-0.5278	0.416	0.496	0.470	0.297
SB5-25	5	CCC	Measured bc	0.652	-9.478	-0.2710	-0.2067	-0.1712	-0.4440	0.536	0.621	0.674	0.360
SB5-26	6	CCC	Measured bc	0.659	-10.373	-0.2173	-0.2106	-0.1710	-0.3991	0.606	0.616	0.675	0.399
SB5-01	0	quenched	Measured bc	0.640	-9.897	-0.2793	-0.2191	-0.1560	-0.4638	0.526	0.604	0.698	0.344
SB5-02	0	quenched	Measured bc	0.644	-9.631	-0.2703	-0.2417	-0.1694	-0.4122	0.537	0.573	0.677	0.387
SB5-03	1	quenched	Measured bc	0.641	-9.323	-0.2619	-0.2273	-0.1915	-0.4366	0.547	0.593	0.643	0.366
SB5-04	4	quenched	Measured bc	0.624	-9.867	-0.2484	-0.2506	-0.2115	-0.4040	0.564	0.562	0.615	0.394
SB5-05	0	quenched	Measured bc	0.650	-10.661	-0.2152	-0.1662	-0.0931	-0.4028	0.609	0.682	0.807	0.396
SB5-06	0	quenched	Measured bc	0.660	-10.067	-0.1936	-0.1753	-0.0926	-0.3697	0.640	0.668	0.808	0.427
SB5-07	5	quenched	Measured bc	0.654	-9.961	-0.1989	-0.1993	-0.1551	-0.4042	0.633	0.632	0.700	0.394
SB5-08	2	quenched	Measured bc	0.655	-9.661	-0.2435	-0.2367	-0.1956	-0.4070	0.571	0.580	0.637	0.392
SB5-09	0	quenched	Measured bc	0.672	-10.941	-0.1103	-0.0885	0.0208	-0.3160	0.776	0.816	1.049	0.483
SB5-10	0	quenched	Measured bc	0.682	-10.486	-0.0892	-0.1295	-0.0311	-0.3290	0.814	0.742	0.931	0.469
SB5-11	3	quenched	Measured bc	0.669	-10.565	-0.1732	-0.1677	-0.1103	-0.3725	0.671	0.680	0.776	0.424
SB5-12	6	quenched	Measured bc	0.666	-10.460	-0.1883	-0.1984	-0.1388	-0.3807	0.648	0.633	0.727	0.416
SB5-13	0	quenched	Measured bc	0.674	-11.974	-0.0389	-0.0306	0.0696	-0.2634	0.914	0.932	1.174	0.545
SB5-14	0	quenched	Measured bc	0.676	-11.688	-0.0759	-0.1031	-0.0010	-0.2695	0.840	0.789	0.998	0.538
SB5-15	0	quenched	Measured bc	0.666	-11.732	-0.0782	-0.1173	-0.0507	-0.3192	0.835	0.763	0.890	0.480
SB5-16	0	quenched	Measured bc	0.663	-11.340	-0.0992	-0.1487	-0.0753	-0.3471	0.796	0.710	0.841	0.450
SB5-17	0	quenched	Measured bc	0.657	-9.337	-0.1820	-0.1655	-0.2076	-0.3346	0.658	0.683	0.620	0.463
SB5-18	0	quenched	Measured bc	0.651	-10.448	-0.1604	-0.1865	-0.1239	-0.3552	0.691	0.651	0.752	0.441
SB5-19	0	quenched	Measured bc	0.652	-11.183	-0.1173	-0.1838	-0.1036	-0.3533	0.763	0.655	0.788	0.443
SB5-20	0	quenched	Measured bc	0.679	-10.209	-0.2002	-0.2202	-0.1855	-0.4234	0.631	0.602	0.652	0.377
SB5-21	1	quenched	Measured bc	0.644	-9.370	-0.2392	-0.1982	-0.1404	-0.4626	0.576	0.634	0.724	0.345
SB5-22	2	quenched	Measured bc	0.664	-9.602	-0.2370	-0.2091	-0.1800	-0.4645	0.579	0.618	0.661	0.343
SB5-23	3	quenched	Measured bc	0.679	-10.025	-0.2581	-0.2177	-0.1756	-0.4861	0.552	0.606	0.667	0.327
SB5-24	4	quenched	Measured bc	0.641	-8.922	-0.3643	-0.2922	-0.2893	-0.5212	0.432	0.510	0.514	0.301
SB5-25	5	quenched	Measured bc	0.652	-9.478	-0.2373	-0.1996	-0.1408	-0.4273	0.579	0.632	0.723	0.374
SB5-26	6	quenched	Measured bc	0.659	-10.373	-0.2248	-0.2358	-0.1545	-0.4158	0.596	0.581	0.701	0.384
SB5-01	0	CCC	Targeted	0.647	-9.877	-0.2896	-0.2120	-0.1832	-0.4723	0.513	0.614	0.656	0.337
SB5-02	0	CCC	Targeted	0.650	-9.623	-0.2609	-0.2138	-0.1969	-0.4191	0.548	0.611	0.635	0.381
SB5-03	1	CCC	Targeted	0.643	-9.487	-0.2538	-0.0706	-0.1275	-0.3504	0.557	0.850	0.746	0.446

Table 4-4. Normalized PCTs by Glass ID and Compositional View for Initial SB5 Study Glasses. (continued)

Class ID	Pair	Heat Treatment	Composition View	Nepheline Discriminator	ΔG_p	log NL [B (g/L)]	log NL [Li (g/L)]	log NL [Na (g/L)]	log NL [Si (g/L)]	NL B (g/L)	NL Li (g/L)	NL Na (g/L)	NL Si (g/L)
SB5-04	4	CCC	Targeted	0.638	-9.400	-0.2435	-0.2233	-0.2421	-0.4037	0.571	0.598	0.573	0.395
SB5-05	0	CCC	Targeted	0.664	-10.255	-0.1887	-0.1382	-0.1014	-0.4076	0.648	0.727	0.792	0.391
SB5-06	0	CCC	Targeted	0.667	-10.001	-0.1694	-0.2935	-0.2090	-0.4539	0.677	0.509	0.618	0.352
SB5-07	5	CCC	Targeted	0.661	-9.864	-0.2401	-0.1985	-0.1819	-0.4277	0.575	0.633	0.658	0.374
SB5-08	2	CCC	Targeted	0.655	-9.778	-0.2271	-0.2184	-0.2277	-0.4148	0.593	0.605	0.592	0.385
SB5-09	0	CCC	Targeted	0.678	-10.924	-0.1127	-0.0796	-0.0378	-0.3435	0.772	0.833	0.917	0.453
SB5-10	0	CCC	Targeted	0.681	-10.670	-0.1290	-0.1135	-0.0838	-0.3284	0.743	0.770	0.825	0.469
SB5-11	3	CCC	Targeted	0.675	-10.533	-0.1448	-0.1354	-0.1235	-0.3611	0.717	0.732	0.753	0.435
SB5-12	6	CCC	Targeted	0.669	-10.446	-0.1915	-0.1759	-0.1495	-0.3734	0.643	0.667	0.709	0.423
SB5-13	0	CCC	Targeted	0.674	-12.076	-0.0486	-0.0271	0.0322	-0.2791	0.894	0.940	1.077	0.526
SB5-14	0	CCC	Targeted	0.677	-11.822	-0.0842	-0.0712	-0.0287	-0.2939	0.824	0.849	0.936	0.508
SB5-15	0	CCC	Targeted	0.671	-11.685	-0.1352	-0.1307	-0.0896	-0.3622	0.733	0.740	0.814	0.434
SB5-16	0	CCC	Targeted	0.665	-11.598	-0.1435	-0.1648	-0.1316	-0.3709	0.719	0.684	0.739	0.426
SB5-17	0	CCC	Targeted	0.664	-9.136	-0.1765	-0.1626	-0.2173	-0.3251	0.666	0.688	0.606	0.473
SB5-18	0	CCC	Targeted	0.655	-10.590	-0.1547	-0.1582	-0.1292	-0.3410	0.700	0.695	0.743	0.456
SB5-19	0	CCC	Targeted	0.654	-11.457	-0.1649	-0.1962	-0.1489	-0.3707	0.684	0.636	0.710	0.426
SB5-20	0	CCC	Targeted	0.677	-10.485	-0.1955	-0.1936	-0.2139	-0.4087	0.638	0.640	0.611	0.390
SB5-21	1	CCC	Targeted	0.643	-9.724	-0.2343	-0.1963	-0.1877	-0.4657	0.583	0.636	0.649	0.342
SB5-22	2	CCC	Targeted	0.655	-10.039	-0.2322	-0.2016	-0.2094	-0.4443	0.586	0.629	0.618	0.360
SB5-23	3	CCC	Targeted	0.675	-10.439	-0.2526	-0.1956	-0.1949	-0.4670	0.559	0.637	0.638	0.341
SB5-24	4	CCC	Targeted	0.638	-9.320	-0.3793	-0.3023	-0.3374	-0.5178	0.418	0.498	0.460	0.304
SB5-25	5	CCC	Targeted	0.645	-10.172	-0.2688	-0.2165	-0.1925	-0.4385	0.538	0.608	0.642	0.364
SB5-26	6	CCC	Targeted	0.653	-10.843	-0.2119	-0.2049	-0.1880	-0.3932	0.614	0.624	0.649	0.404
SB5-01	0	quenched	Targeted	0.647	-9.877	-0.2842	-0.2156	-0.1545	-0.4674	0.520	0.609	0.701	0.341
SB5-02	0	quenched	Targeted	0.650	-9.623	-0.2637	-0.2245	-0.1772	-0.4243	0.545	0.596	0.665	0.376
SB5-03	1	quenched	Targeted	0.643	-9.487	-0.2684	-0.2235	-0.1989	-0.4417	0.539	0.598	0.633	0.362
SB5-04	4	quenched	Targeted	0.638	-9.400	-0.2296	-0.2258	-0.2000	-0.4156	0.589	0.595	0.631	0.384
SB5-05	0	quenched	Targeted	0.664	-10.255	-0.2002	-0.1507	-0.0844	-0.4154	0.631	0.707	0.823	0.384
SB5-06	0	quenched	Targeted	0.667	-10.001	-0.1824	-0.1642	-0.0945	-0.3792	0.657	0.685	0.805	0.418
SB5-07	5	quenched	Targeted	0.661	-9.864	-0.2063	-0.1874	-0.1529	-0.4097	0.622	0.650	0.703	0.389
SB5-08	2	quenched	Targeted	0.655	-9.778	-0.2313	-0.2164	-0.2071	-0.4124	0.587	0.608	0.621	0.387
SB5-09	0	quenched	Targeted	0.678	-10.924	-0.0921	-0.0716	0.0109	-0.3304	0.809	0.848	1.025	0.467
SB5-10	0	quenched	Targeted	0.681	-10.670	-0.0905	-0.1150	-0.0425	-0.3301	0.812	0.767	0.907	0.468
SB5-11	3	quenched	Targeted	0.675	-10.533	-0.1720	-0.1542	-0.1168	-0.3843	0.673	0.701	0.764	0.413
SB5-12	6	quenched	Targeted	0.669	-10.446	-0.1805	-0.1743	-0.1446	-0.3852	0.660	0.669	0.717	0.412
SB5-13	0	quenched	Targeted	0.674	-12.076	-0.0293	-0.0183	0.0596	-0.2671	0.935	0.959	1.147	0.541
SB5-14	0	quenched	Targeted	0.677	-11.822	-0.0673	-0.0867	-0.0150	-0.2801	0.856	0.819	0.966	0.525
SB5-15	0	quenched	Targeted	0.671	-11.685	-0.0848	-0.1137	-0.0508	-0.3263	0.823	0.770	0.890	0.472

Table 4-4. Normalized PCTs by Glass ID and Compositional View for Initial SB5 Study Glasses. (continued)

Class ID	Pair	Heat Treatment	Composition View	Nepheline Discriminator	ΔG_p	log NL [B (g/L)]	log NL [Li(g/L)]	log NL [Na (g/L)]	log NL [Si (g/L)]	NL B (g/L)	NL Li (g/L)	NL Na (g/L)	NL Si (g/L)
SB5-16	0	quenched	Targeted	0.665	-11.598	-0.1047	-0.1419	-0.0840	-0.3537	0.786	0.721	0.824	0.443
SB5-17	0	quenched	Targeted	0.664	-9.136	-0.1834	-0.1588	-0.2011	-0.3405	0.656	0.694	0.629	0.457
SB5-18	0	quenched	Targeted	0.655	-10.590	-0.1679	-0.1785	-0.1277	-0.3578	0.679	0.663	0.745	0.439
SB5-19	0	quenched	Targeted	0.654	-11.457	-0.1313	-0.1775	-0.1113	-0.3574	0.739	0.664	0.774	0.439
SB5-20	0	quenched	Targeted	0.677	-10.485	-0.2024	-0.2018	-0.1971	-0.4230	0.627	0.628	0.635	0.378
SB5-21	1	quenched	Targeted	0.643	-9.724	-0.2320	-0.1972	-0.1501	-0.4577	0.586	0.635	0.708	0.349
SB5-22	2	quenched	Targeted	0.655	-10.039	-0.2406	-0.2117	-0.1921	-0.4496	0.575	0.614	0.643	0.355
SB5-23	3	quenched	Targeted	0.675	-10.439	-0.2615	-0.2166	-0.1900	-0.4825	0.548	0.607	0.646	0.329
SB5-24	4	quenched	Targeted	0.638	-9.320	-0.3623	-0.2903	-0.2984	-0.5112	0.434	0.513	0.503	0.308
SB5-25	5	quenched	Targeted	0.645	-10.172	-0.2351	-0.2094	-0.1621	-0.4218	0.582	0.617	0.689	0.379
SB5-26	6	quenched	Targeted	0.653	-10.843	-0.2194	-0.2301	-0.1714	-0.4099	0.603	0.589	0.674	0.389

4.3.5 Effects of Heat Treatment on PCTs

Exhibit B6 in Appendix B provides a series of plots and statistical comparisons that show the effects of heat treatment on the common logarithm ppm responses of interest of the triplicate PCTs for each element for each study glass. The quenched version of a given glass yielded measurements indicating a significantly (at the 5% significance level) different mean $\log(\text{ppm})$ response as compared to the CCC version of the glass for a given element if the $\text{Prob}>|t|$ value in the exhibit is 0.05 or smaller. There was a statistically significant difference in the mean response for Na (the quenched version was higher) for SB5-01, SB5-04, SB5-05, SB5-06, SB5-13, SB5-15, SB5-19, SB5-21, SB5-25, and SB5-26. There was a statistically significant difference in the mean response for Na (the CCC version was higher) for SB5-03. There was a statistically significant difference in the mean response for Si — the CCC version was higher for SB5-03 and the quenched version was higher for SB5-06. There were statistically significant differences in the mean response for Li — the CCC versions of SB5-03, SB5-11 and SB5-26 were higher than their CCC counterparts and the quenched version was higher for SB5-06. Exhibit B7 in Appendix B provides a series of plots that show the effects of heat treatment on the normalized PCT response based on the three different compositional views: measured, measured bias-corrected, and targeted.

While some statistically significant differences in PCT responses relative to heat treatment were identified, from a practical perspective, these differences are insignificant since the normalized release values remain well below those of the EA glass regardless of thermal history.

4.3.6 Initial Comparisons of Surrogate Pairs

Exhibit B8 in Appendix B provides a series of plots to facilitate comparisons between pairs of study glasses, one with U_3O_8 and one either without U_3O_8 or with a surrogate for U_3O_8 . The plots show the leachate concentrations in ppm and in common logarithms of the ppm values for each of the triplicate PCTs for the quenched and CCC versions of each of the glasses. The mean values of each set of three measurements for each pair are connected in these plots. This exhibit provides an opportunity to gauge the differences in the mean responses for the pairs of glasses relative to the repeatability of each set of triplicate PCTs.

Additional plots of the normalized PCT responses also are provided in this exhibit. These plots provide an opportunity to compare the PCT responses over the three compositional views for the glasses. In general, the PCT responses for the surrogate glasses or the glasses without U_3O_8 were quite similar to their U_3O_8 -containing counterparts. The average percent error in NL [B] normalized by the measured bc compositions for the surrogate glasses compared with their radioactive counterparts is 8.8%. The largest difference in NL [B] is 0.152 g/L (see Table 4-4). While this is a promising result for both the surrogates and the glasses renormalized without U_3O_8 , additional data must be collected before the best solution to fabricating test glasses without radioactive components can be identified.

4.3.7 Predicted versus Measured Durability

As seen in Table 4-4, the durabilities of the study glasses are all very acceptable when compared to the durability of the EA benchmark glass. The ability of the DWPF models to correctly predict the durability of glasses SB5-01 through SB5-20 is investigated in this section. Exhibit B9 in Appendix B provides plots of the DWPF models that relate the logarithm of the normalized PCT (for each element of interest) to a linear function of a free energy of hydration term (ΔG_p , kcal/100g glass) derived from all of the glass compositional views and heat treatments for these glasses.¹⁵ Prediction limits (at a 95% confidence) for an individual PCT result are also plotted

along with the linear fit. The EA and ARM results are indicated on these plots as well. Exhibit B10 in Appendix B provides a version of these plots for the quenched glasses only while Exhibit B11 in Appendix B provides a version for CCC glasses only. All of these plots show good predictability by the DWPF durability models of PCT responses for the SB5-01 through SB5-20 glasses.

Figure 4-2 provides a closer look at the PCT response for boron, which is used as an indicator for the leaching rate of radioactive species. These plots illustrate good predictability of the study glasses SB5-01 through SB5-20 by the current ΔG_p models.

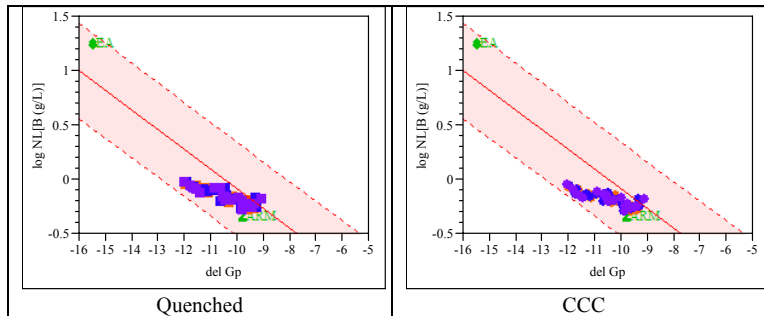


Figure 4-2. Normalized Leachate for Boron versus ΔG_p Model Prediction with 95% Confidence Interval for Individual PCTs.

5.0 Conclusions

The objective of this study was to experimentally measure the properties and performance of a series of glasses with compositions that could represent SB5 as processed at the DWPF. The data were used to provide recommendations to LWO regarding blending and washing strategies in preparing SB5 based on acceptability of the glass compositions. These data were also used to guide frit optimization efforts as the SB5 composition was finalized.

Glass compositions for this study were developed by combining a series of SB5 composition projections with a group of frits. Three composition projections for SB5 were developed using a model-based approach at SRNL. These compositions, referred to as SB5 Cases B, C and D, projected removal of 25, 50 and 75% (respectively) of the aluminum in Tank 51 through the low temperature aluminum dissolution process. The frits for this study were selected based on their predicted operating windows (i.e., ranges of waste loadings over which the predicted properties of the glasses were acceptable) and their potential (based on historical trends) to provide acceptable melt rates for SB5.

Six additional glasses were designed to evaluate alternatives for uranium in DWPF-type glasses used for variability studies and some scoping studies. Since special measures are necessary when working with uranium-containing glasses in the laboratory, it is desirable as a cost and time saving measure to find an alternative for uranium to support frit optimization efforts. Hafnium and neodymium were investigated as potential surrogates for uranium, and other glasses were made by simply excluding the radioactive components and renormalizing the glass composition.

The study glasses were fabricated and characterized at SRNL. Chemical composition analyses suggested only minor difficulties in meeting the targeted compositions for some of the oxides for some of the glasses. Although minor differences were observed, they did not have a significant impact on the conclusions made in this study. Several of the study compositions showed retention of more than 0.5 wt% SO_4^{2-} in glass.

Trevorite (a spinel) was the only crystalline phase that was positively identified in a few of the study glasses after the CCC heat treatment. Spinel is not of concern as they have been shown to have little impact on the durability of high level waste glasses.¹⁴ The crystallization behavior of the surrogate glasses was generally the same as that of their U_3O_8 -containing counterparts. There are two pairs that were exceptions: SB5-04 (amorphous) and SB5-24 (possible trevorite), along with SB5-07 (amorphous) and SB5-25 (trevorite). In these cases, the surrogate glasses (SB5-24 and SB5-25) appear to be more conservative (more prone to crystallization) than their U_3O_8 -containing counterparts.

Chemical durability was quantified using the PCT. The normalized leachate values for B, Li, Na and Si for all of the study glasses were well below those of the EA benchmark glass, regardless of heat treatment or compositional view. This indicates that all of the glasses had very acceptable durability performance. The highest NL [B] for the study glasses was 0.914 g/L (the quenched version of glass SB5-13), normalized using the measured, bias-corrected composition. There was little practical impact of the CCC heat treatment on the PCT responses of the study glasses. The measured PCT responses were predictable by the current ΔG_p models.

In general, the PCT responses for the surrogate glasses or the glasses without U_3O_8 were quite similar to their U_3O_8 -containing counterparts. The average percent error in NL [B] normalized by

the measured bc compositions for the surrogate glasses compared with their radioactive counterparts was 8.8%. The largest difference in NL [B] was 0.152 g/L.

While similarities existed in crystallization behavior and PCT response for both the surrogates and the glasses renormalized without U_3O_8 , additional data must be collected before the best solution to fabricating test glasses without radioactive components can be identified. Further surrogate studies are currently underway at SRNL.

The results of this study indicate that a frit composition can be identified that will provide a processable and durable glass when combined with SB5 at the DWPF. Additional studies are underway to recommend a frit that continues to meet process and performance requirements as well as to provide an enhanced melt rate for improved waste throughput.

6.0 References

1. Hay, M. S., J. M. Pareizs, C. J. Bannochie, M. E. Stone, D. R. Click and D. J. McCabe, "Characterization and Aluminum Dissolution Demonstration with a 3 Liter Tank 51H Sample," *U.S. Department of Energy Report WSRC-STI-2007-00697, Revision 0*, Washington Savannah River Company, Aiken, SC (2008).
2. Fox, K. M. and T. B. Edwards, "SB5 with the Estimated Impact of Low-Temperature Aluminum Dissolution: Preliminary Frits for Melt Rate Testing," *U.S. Department of Energy Report WSRC-STI-2008-00006, Revision 0*, Washington Savannah River Company, Aiken, SC (2008).
3. Lopez, C., X. Deschanel, J. M. Bart, J. M. Boubals, C. D. Auwer and E. Simoni, "Solubility of Actinide Surrogates in Nuclear Glasses," *Journal of Nuclear Materials*, **312** 76-80 (2003).
4. Ramsey, W. G., N. E. Bibler and T. F. Meaker, "Compositions and Durabilities of Glasses for Immobilization of Plutonium and Uranium," *U.S. Department of Energy Report WSRC-MS-94-0550*, Westinghouse Savannah River Company, Aiken, SC (1994).
5. SRNL, "Glass Batching," *U.S. Department of Energy Report SRTC Procedure Manual, L29, ITS-0001*, Westinghouse Savannah River Company, Aiken, SC (2002).
6. SRNL, "Glass Melting," *U.S. Department of Energy Report SRTC Procedure Manual, L29, ITS-0003*, Westinghouse Savannah River Company, Aiken, SC (2002).
7. Marra, S. L. and C. M. Jantzen, "Characterization of Projected DWPF Glass Heat Treated to Simulate Canister Centerline Cooling," *U.S. Department of Energy Report WSRC-TR-92-142, Revision 1*, Westinghouse Savannah River Company, Aiken, SC (1993).
8. Edwards, T. B., "Analytical Plans for Measuring the Chemical Compositions of Glasses from an EM-20 Study and Glasses from Two DWPF Studies," *U.S. Department of Energy Report SRNL-SCS-2008-00003*, Washington Savannah River Company, Aiken, SC (2008).
9. Edwards, T. B., "An Analytical Plan for Measuring the Chemical Compositions of Some SB5 Glasses Without Uranium," *U.S. Department of Energy Report SRNL-SCS-2008-00043*, Washington Savannah River Company, Aiken, SC (2008).
10. ASTM, "Standard Test Methods for Determining Chemical Durability of Nuclear Waste Glasses: The Product Consistency Test (PCT)," *ASTM C-1285*, (2002).
11. Jantzen, C. M., N. E. Bibler, D. C. Beam, C. L. Crawford and M. A. Pickett, "Characterization of the Defense Waste Processing Facility (DWPF) Environmental Assessment (EA) Glass Standard Reference Material," *U.S. Department of Energy Report WSRC-TR-92-346, Revision 1*, Westinghouse Savannah River Company, Aiken, SC (1993).
12. Edwards, T. B., "Analytical Plans for Measuring the PCT Solutions of Glasses from an EM-20 Study and Glasses from Two DWPF Studies," *U.S. Department of Energy Report SRNL-SCS-2008-00005*, Washington Savannah River Company, Aiken, SC (2008).

13. Edwards, T. B., "An Analytical Plan for Measuring the PCT Solutions for Some SB5 Glasses without Uranium," *U.S. Department of Energy Report SRNL-SCS-2008-00042*, Washington Savannah River Company, Aiken, SC (2008).
14. Bickford, D. F. and C. M. Jantzen, "Devitrification of SRL Defense Waste Glass," *Sci. Basis for Nuclear Waste Management VII*, edited by G. L. McVay. Elsevier, New York, pp. 557-565 (1984).
15. Jantzen, C. M., J. B. Picket, K. G. Brown, T. B. Edwards and D. C. Beam, "Process/Product Models for the Defense Waste Processing Facility (DWPF): Part I. Predicting Glass Durability from Composition Using a Thermodynamic Hydration Energy Reaction Model (THERMO)," *U.S. Department of Energy Report WSRC-TR-93-672, Revision 1*, Westinghouse Savannah River Company, Aiken, SC (1995).

Appendix A

Tables and Exhibits Supporting the Analysis of the Chemical Composition Measurements

Table A1. Targeted Oxide Concentrations (in wt%) for the Initial SB5 Glass Study (Part 1).

Glass ID	Ag ₂ O	Al ₂ O ₃	B ₂ O ₃	BaO	CaO	CdO	Ce ₂ O ₃	CoO	Cr ₂ O ₃	CuO	Fe ₂ O ₃	HfO ₂	K ₂ O	La ₂ O ₃	Li ₂ O
SB5-01	0.004	11.009	6.200	0.039	3.157	0.023	0.141	0.009	0.142	0.005	8.834	0.000	0.025	0.062	4.340
SB5-02	0.004	11.009	6.820	0.039	1.917	0.023	0.141	0.009	0.142	0.005	8.834	0.000	0.025	0.062	4.340
SB5-03	0.004	11.009	8.680	0.039	1.917	0.023	0.141	0.009	0.142	0.005	8.834	0.000	0.025	0.062	3.720
SB5-04	0.004	11.009	9.920	0.039	0.677	0.023	0.141	0.009	0.142	0.005	8.834	0.000	0.025	0.062	3.100
SB5-05	0.004	9.460	6.200	0.043	3.227	0.025	0.155	0.010	0.156	0.005	9.745	0.000	0.027	0.068	4.340
SB5-06	0.004	9.460	6.820	0.043	1.987	0.025	0.155	0.010	0.156	0.005	9.745	0.000	0.027	0.068	4.340
SB5-07	0.004	9.460	8.680	0.043	1.987	0.025	0.155	0.010	0.156	0.005	9.745	0.000	0.027	0.068	3.720
SB5-08	0.004	9.460	9.920	0.043	0.747	0.025	0.155	0.010	0.156	0.005	9.745	0.000	0.027	0.068	3.100
SB5-09	0.004	7.947	6.200	0.046	3.281	0.027	0.167	0.011	0.167	0.005	10.447	0.000	0.030	0.073	4.340
SB5-10	0.004	7.947	6.820	0.046	2.041	0.027	0.167	0.011	0.167	0.005	10.447	0.000	0.030	0.073	4.340
SB5-11	0.004	7.947	8.680	0.046	2.041	0.027	0.167	0.011	0.167	0.005	10.447	0.000	0.030	0.073	3.720
SB5-12	0.004	7.947	9.920	0.046	0.801	0.027	0.167	0.011	0.167	0.005	10.447	0.000	0.030	0.073	3.100
SB5-13	0.000	7.217	6.200	0.063	3.336	0.000	0.101	0.000	0.093	0.033	10.504	0.000	0.077	0.018	4.340
SB5-14	0.000	7.217	6.820	0.063	2.096	0.000	0.101	0.000	0.093	0.033	10.504	0.000	0.077	0.018	4.340
SB5-15	0.000	7.217	8.680	0.063	2.096	0.000	0.101	0.000	0.093	0.033	10.504	0.000	0.077	0.018	3.720
SB5-16	0.000	7.217	9.920	0.063	0.856	0.000	0.101	0.000	0.093	0.033	10.504	0.000	0.077	0.018	3.100
SB5-17	0.004	11.009	9.300	0.039	0.677	0.023	0.141	0.009	0.142	0.005	8.834	0.000	0.025	0.062	5.580
SB5-18	0.004	9.460	8.680	0.043	0.747	0.025	0.155	0.010	0.156	0.005	9.745	0.000	0.027	0.068	4.340
SB5-19	0.004	7.947	9.300	0.046	0.801	0.027	0.167	0.011	0.167	0.005	10.447	0.000	0.030	0.073	3.100
SB5-20	0.000	7.217	9.920	0.063	0.856	0.000	0.101	0.000	0.093	0.033	10.504	0.000	0.077	0.018	2.480
SB5-21	0.004	11.009	8.680	0.039	1.917	0.023	0.141	0.009	0.142	0.005	8.834	0.000	0.025	0.062	3.720
SB5-22	0.004	9.460	9.920	0.043	0.747	0.025	0.155	0.010	0.156	0.005	9.745	0.000	0.027	0.068	3.100
SB5-23	0.004	7.947	8.680	0.046	2.041	0.027	0.167	0.011	0.167	0.005	10.447	3.342	0.030	0.073	3.720
SB5-24	0.004	11.009	9.920	0.039	0.677	0.023	0.141	0.009	0.142	0.005	8.834	2.826	0.025	0.062	3.100
SB5-25	0.004	10.305	8.680	0.047	2.054	0.027	0.169	0.011	0.170	0.005	10.615	0.000	0.030	0.074	3.720
SB5-26	0.005	8.714	9.920	0.050	0.878	0.030	0.183	0.012	0.183	0.005	11.454	0.000	0.033	0.080	3.100

Table A1. Targeted Oxide Concentrations (in wt%) for the Initial SB5 Glass Study (Part 2).

Glass ID	MgO	MnO	Na ₂ O	Nd ₂ O ₃	NiO	P ₂ O ₅	PbO	SiO ₂	SO ₄ ²⁻	SrO	ThO ₂	TiO ₂	U ₃ O ₈	ZnO	ZrO ₂
SB5-01	0.447	1.847	13.776	0.000	1.037	0.201	0.008	45.357	0.277	0.121	0.000	0.010	2.826	0.006	0.098
SB5-02	0.447	1.847	13.776	0.000	1.037	0.201	0.008	45.977	0.277	0.121	0.000	0.010	2.826	0.006	0.098
SB5-03	0.447	1.847	13.776	0.000	1.037	0.201	0.008	44.737	0.277	0.121	0.000	0.010	2.826	0.006	0.098
SB5-04	0.447	1.847	14.396	0.000	1.037	0.201	0.008	44.737	0.277	0.121	0.000	0.010	2.826	0.006	0.098
SB5-05	0.494	2.038	13.534	0.000	1.144	0.221	0.009	45.431	0.289	0.134	0.000	0.011	3.117	0.006	0.108
SB5-06	0.494	2.038	13.534	0.000	1.144	0.221	0.009	46.051	0.289	0.134	0.000	0.011	3.117	0.006	0.108
SB5-07	0.494	2.038	13.534	0.000	1.144	0.221	0.009	44.811	0.289	0.134	0.000	0.011	3.117	0.006	0.108
SB5-08	0.494	2.038	14.154	0.000	1.144	0.221	0.009	44.811	0.289	0.134	0.000	0.011	3.117	0.006	0.108
SB5-09	0.529	2.184	13.650	0.000	1.227	0.236	0.010	45.489	0.310	0.143	0.000	0.012	3.342	0.007	0.116
SB5-10	0.529	2.184	13.650	0.000	1.227	0.236	0.010	46.109	0.310	0.143	0.000	0.012	3.342	0.007	0.116
SB5-11	0.529	2.184	13.650	0.000	1.227	0.236	0.010	44.869	0.310	0.143	0.000	0.012	3.342	0.007	0.116
SB5-12	0.529	2.184	14.270	0.000	1.227	0.236	0.010	44.869	0.310	0.143	0.000	0.012	3.342	0.007	0.116
SB5-13	0.467	2.316	14.678	0.000	1.198	0.000	0.036	45.338	0.547	0.000	0.004	0.350	2.925	0.042	0.117
SB5-14	0.467	2.316	14.678	0.000	1.198	0.000	0.036	45.958	0.547	0.000	0.004	0.350	2.925	0.042	0.117
SB5-15	0.467	2.316	14.678	0.000	1.198	0.000	0.036	44.718	0.547	0.000	0.004	0.350	2.925	0.042	0.117
SB5-16	0.467	2.316	15.298	0.000	1.198	0.000	0.036	44.718	0.547	0.000	0.004	0.350	2.925	0.042	0.117
SB5-17	0.447	1.847	11.916	0.000	1.037	0.201	0.008	45.357	0.277	0.121	0.000	0.010	2.826	0.006	0.098
SB5-18	0.494	2.038	14.154	0.000	1.144	0.221	0.009	44.811	0.289	0.134	0.000	0.011	3.117	0.006	0.108
SB5-19	0.529	2.184	15.510	0.000	1.227	0.236	0.010	44.249	0.310	0.143	0.000	0.012	3.342	0.007	0.116
SB5-20	0.467	2.316	14.678	0.000	1.198	0.000	0.036	45.958	0.547	0.000	0.004	0.350	2.925	0.042	0.117
SB5-21	0.447	1.847	13.776	2.826	1.037	0.201	0.008	44.737	0.277	0.121	0.000	0.010	0.000	0.006	0.098
SB5-22	0.494	2.038	14.154	3.117	1.144	0.221	0.009	44.811	0.289	0.134	0.000	0.011	0.000	0.006	0.108
SB5-23	0.529	2.184	13.650	0.000	1.227	0.236	0.010	44.869	0.310	0.143	0.000	0.012	0.000	0.007	0.116
SB5-24	0.447	1.847	14.396	0.000	1.037	0.201	0.008	44.737	0.277	0.121	0.000	0.010	0.000	0.006	0.098
SB5-25	0.538	2.220	14.355	0.000	1.247	0.240	0.010	44.882	0.315	0.145	0.000	0.012	0.000	0.007	0.118
SB5-26	0.580	2.395	15.168	0.000	1.345	0.259	0.011	44.951	0.340	0.157	0.000	0.013	0.000	0.008	0.127

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 1).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Al	Ba	Ca	Cd	Ce	Co	Cr	Cu	Fe
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	1	BCHLM2-111	2.49	0.126	0.834	<0.010	0.011	<0.010	0.073	0.295	9.33
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	2	UstdLM2-111	2.03	<0.010	0.892	<0.010	0.001	<0.010	0.162	<0.010	9.5
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	1	3	N02LM11	5.73	0.031	2.41	0.014	0.084	<0.010	0.077	<0.010	6.26
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	1	4	N07LM11	5.12	0.035	2.5	0.013	0.052	<0.010	0.087	<0.010	6.87
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	5	N03LM21	5.89	0.033	0.463	0.016	0.057	<0.010	0.077	0.01	6.15
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	6	N03LM11	5.9	0.033	0.47	0.016	0.058	<0.010	0.078	0.011	6.09
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	7	N13LM21	4.21	0.038	0.568	0.017	0.126	<0.010	0.109	0.011	6.85
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	1	8	N12LM21	5.76	0.032	1.47	0.014	0.083	<0.010	0.08	<0.010	5.79
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	9	N14LM11	4.18	0.037	1.57	0.018	0.126	<0.010	0.098	0.011	6.54
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	1	10	N15LM21	5.07	0.035	1.5	0.015	0.083	<0.010	0.086	0.01	6.51
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	11	BCHLM2-112	2.44	0.126	0.839	<0.010	0.011	<0.010	0.074	0.298	9.18
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	12	UstdLM1-112	2.04	<0.010	0.89	<0.010	0.066	<0.010	0.162	<0.010	9.47
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	1	13	N12LM11	5.75	0.032	1.43	0.014	0.084	<0.010	0.083	<0.010	6
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	14	N14LM21	4.13	0.038	1.56	0.018	0.126	<0.010	0.096	0.011	6.96
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	1	15	N05LM21	5.18	0.023	0.747	<0.010	0.019	<0.010	0.038	0.024	7.44
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	1	16	N07LM21	5.11	0.034	2.55	0.012	0.051	<0.010	0.085	<0.010	6.42
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	17	N13LM11	4.18	0.038	0.576	0.017	0.125	<0.010	0.109	0.01	6.82
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	1	18	N05LM11	5.17	0.023	0.745	<0.010	0.02	<0.010	0.038	0.023	7.58
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	1	19	N02LM21	5.96	0.032	2.56	0.014	0.087	<0.010	0.078	<0.010	6.32
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	1	20	N15LM11	5.03	0.035	1.54	0.016	0.085	<0.010	0.089	0.014	6.75
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	21	BCHLM2-113	2.53	0.126	0.85	<0.010	0.011	<0.010	0.073	0.3	9.28
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	22	UstdLM2-113	2.04	<0.010	0.896	<0.010	0.073	<0.010	0.161	<0.010	9.5
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	1	BCHLM2-121	2.49	0.126	0.84	<0.010	0.01	<0.010	0.073	0.3	8.63
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	2	UstdLM2-121	2.03	<0.010	0.892	<0.010	0	<0.010	0.161	<0.010	8.72
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	3	N13LM22	4.13	0.037	0.568	0.015	0.125	<0.010	0.108	0.011	6.48
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	2	4	N07LM22	5.02	0.032	2.46	0.009	0.05	<0.010	0.083	<0.010	6.47
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	2	5	N05LM22	5.19	0.021	0.747	<0.010	0.019	<0.010	0.037	0.023	7.43
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	2	6	N05LM12	5.17	0.022	0.734	<0.010	0.019	<0.010	0.038	0.022	7.57
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	2	7	N02LM12	5.83	0.029	2.33	0.011	0.082	<0.010	0.074	<0.010	5.8
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	8	N03LM12	5.83	0.032	0.464	0.014	0.057	<0.010	0.077	0.011	5.95
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	2	9	N02LM22	5.87	0.03	2.42	0.012	0.085	<0.010	0.077	<0.010	5.87
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	2	10	N15LM12	4.9	0.033	1.48	0.013	0.084	<0.010	0.086	0.014	6.5
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	11	BCHLM2-122	2.44	0.123	0.832	<0.010	0.01	<0.010	0.071	0.298	8.95
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	12	UstdLM2-122	2.07	<0.010	0.882	<0.010	0.028	<0.010	0.157	<0.010	9.5
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	13	N03LM22	5.76	0.031	0.469	0.013	0.056	<0.010	0.075	0.01	6.19
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	14	N14LM22	4.17	0.037	1.52	0.016	0.125	<0.010	0.094	0.011	6.83
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	2	15	N07LM12	5.03	0.034	2.43	0.01	0.052	<0.010	0.087	<0.010	6.64
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	2	16	N12LM12	5.7	0.031	1.38	0.012	0.082	<0.010	0.083	<0.010	5.89
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	17	N14LM12	4.09	0.037	1.47	0.016	0.126	<0.010	0.099	0.011	6.65
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	2	18	N12LM22	5.66	0.031	1.37	0.012	0.083	<0.010	0.081	<0.010	5.73
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	19	N13LM12	4.11	0.037	0.569	0.015	0.125	<0.010	0.109	0.01	7.43
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	2	20	N15LM22	5.01	0.034	1.46	0.013	0.082	<0.010	0.086	0.01	7.13

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 1, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Al	Ba	Ca	Cd	Ce	Co	Cr	Cu	Fe
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	21	BCHLM2-123	2.53	0.126	0.832	<0.010	0.01	<0.010	0.073	0.295	9.61
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	22	UstdLM2-123	2.04	<0.010	0.877	<0.010	0	<0.010	0.164	<0.010	9.81
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	1	BCHLM2-211	2.49	0.129	0.873	<0.010	0.013	<0.010	0.075	0.311	8.99
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	2	UstdLM2-211	2.04	<0.010	0.927	<0.010	0.002	<0.010	0.163	<0.010	9.32
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	1	3	N11LM21	4.66	0.022	0.722	<0.010	0.018	<0.010	0.041	0.023	6.82
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	4	N06LM11	4.14	0.021	0.628	<0.010	0.018	<0.010	0.038	0.02	6.01
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	1	5	N09LM11	5.72	0.033	1.38	0.014	0.089	<0.010	0.08	0.012	6.05
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	1	6	N04LM11	4.17	0.036	2.43	0.015	0.084	<0.010	0.09	0.011	7.38
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	1	7	N09LM21	5.79	0.034	1.39	0.014	0.091	<0.010	0.082	0.013	6.37
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	1	8	N11LM11	4.75	0.022	0.711	<0.010	0.018	<0.010	0.047	0.022	7.6
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	9	N08LM11	4.27	0.038	1.57	0.018	0.126	<0.010	0.084	0.011	7.55
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	10	BCHLM2-212	2.52	0.127	0.867	<0.010	0.013	<0.010	0.074	0.305	9.48
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	11	UstdLM2-212	2.05	<0.010	0.944	<0.010	0.002	<0.010	0.166	<0.010	9.23
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	1	12	N10LM21	4.83	0.037	0.533	0.014	0.056	<0.010	0.088	0.01	6.6
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	13	N01LM11	4.99	0.037	1.42	0.015	0.094	<0.010	0.083	0.011	6.88
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	14	N06LM21	4.22	0.021	0.636	<0.010	0.018	<0.010	0.038	0.02	6.42
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	15	N08LM21	4.17	0.039	1.46	0.018	0.128	<0.010	0.085	0.011	7
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	1	16	N10LM11	5.03	0.038	0.564	0.016	0.056	<0.010	0.093	0.012	6.72
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	1	17	N04LM21	4.16	0.038	2.3	0.016	0.088	<0.010	0.094	0.011	7.16
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	18	N01LM21	5.21	0.033	1.54	0.013	0.088	<0.010	0.075	0.01	6.75
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	19	BCHLM2-213	2.54	0.129	0.881	<0.010	0.013	<0.010	0.075	0.313	9.36
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	20	UstdLM2-213	2.05	<0.010	0.933	<0.010	0.002	<0.010	0.165	<0.010	9.92
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	1	BCHLM2-221	2.62	0.127	0.853	<0.010	0.01	<0.010	0.073	0.302	8.77
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	2	UstdLM2-221	2.21	<0.010	0.906	<0.010	<0.010	<0.010	0.163	<0.010	9.38
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	3	N06LM22	4.4	0.019	0.622	<0.010	0.015	<0.010	0.035	0.016	6.11
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	2	4	N11LM22	4.91	0.02	0.692	<0.010	0.016	<0.010	0.039	0.018	7.18
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	5	N08LM12	4.39	0.036	1.6	0.015	0.121	<0.010	0.081	<0.010	7.16
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	6	N01LM22	5.21	0.033	1.56	0.011	0.089	<0.010	0.078	<0.010	6.74
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	7	N06LM12	4.37	0.019	0.609	<0.010	0.016	<0.010	0.036	0.016	6.15
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	2	8	N04LM12	4.43	0.034	2.59	0.012	0.081	<0.010	0.089	<0.010	7.28
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	2	9	N10LM12	5.27	0.037	0.541	0.014	0.052	<0.010	0.092	<0.010	6.73
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	10	BCHLM2-222	2.66	0.128	0.859	<0.010	0.01	<0.010	0.073	0.304	8.91
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	11	UstdLM2-222	2.2	<0.010	0.928	<0.010	<0.010	<0.010	0.164	<0.010	9.39
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	2	12	N09LM12	6.14	0.032	1.55	0.012	0.086	<0.010	0.081	<0.010	5.85
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	13	N08LM22	4.41	0.037	1.62	0.016	0.122	<0.010	0.085	<0.010	6.99
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	2	14	N04LM22	4.34	0.038	2.58	0.014	0.085	<0.010	0.096	<0.010	6.63
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	2	15	N09LM22	5.96	0.034	1.51	0.013	0.089	<0.010	0.085	<0.010	5.59
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	2	16	N10LM22	5.01	0.037	0.513	0.012	0.054	<0.010	0.089	<0.010	6.59
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	17	N01LM12	5.19	0.036	1.56	0.012	0.092	<0.010	0.083	<0.010	6.51
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	2	18	N11LM12	4.92	0.021	0.677	<0.010	0.016	<0.010	0.046	0.018	6.72
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	19	BCHLM2-223	2.62	0.134	0.833	<0.010	0.011	<0.010	0.077	0.304	8.91
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	20	UstdLM2-223	2.2	<0.010	0.881	<0.010	<0.010	<0.010	0.173	<0.010	9.16
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	1	BCHLM3-111	2.58	0.125	0.841	<0.010	0.013	<0.010	0.072	0.305	9.37

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 1, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Al	Ba	Ca	Cd	Ce	Co	Cr	Cu	Fe
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	2	UstdLM3-111	2.14	<0.010	0.904	<0.010	<0.010	<0.010	0.156	<0.010	9.7
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	1	3	P11LM11	2.38	0.066	0.702	<0.010	0.188	<0.010	0.067	0.041	8.93
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	4	P05LM21	2.16	0.058	0.606	<0.010	0.213	<0.010	0.057	0.034	7.68
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	1	5	P08LM21	3.93	0.049	1.55	<0.010	0.069	<0.010	0.061	0.031	7.62
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	1	6	P01LM11	3.94	0.052	0.584	<0.010	0.075	<0.010	0.06	0.029	7.72
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	1	7	P08LM11	3.88	0.051	1.52	<0.010	0.073	<0.010	0.064	0.032	7.89
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	1	8	P01LM21	3.96	0.052	0.591	<0.010	0.14	<0.010	0.06	0.029	7.82
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	9	P05LM11	2.17	0.059	0.613	<0.010	0.145	<0.010	0.056	0.033	7.83
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	10	BCHLM3-112	2.6	0.13	0.817	<0.010	0.013	<0.010	0.075	0.303	9.82
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	11	UstdLM3-112	2.16	<0.010	0.874	<0.010	<0.010	<0.010	0.163	<0.010	10.07
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	12	P09LM21	5.31	0.034	0.494	0.015	0.11	<0.010	0.086	<0.010	7.09
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	13	P09LM11	5.29	0.036	0.498	0.016	0.114	<0.010	0.089	0.01	7.12
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	14	P10LM11	2.49	0.063	0.577	<0.010	0.12	<0.010	0.07	0.042	7.32
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	15	P10LM21	2.49	0.06	0.572	<0.010	0.115	<0.010	0.066	0.042	7.14
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	16	P14LM11	4.01	0.058	2.57	<0.010	0.075	<0.010	0.066	0.029	7.94
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	1	17	P11LM21	2.43	0.068	0.673	<0.010	0.172	<0.010	0.067	0.041	9.26
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	18	P14LM21	4.03	0.057	2.59	<0.010	0.085	<0.010	0.065	0.029	7.85
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	19	BCHLM3-113	2.65	0.13	0.807	<0.010	0.012	<0.010	0.075	0.3	9.48
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	20	UstdLM3-113	2.16	<0.010	0.862	<0.010	<0.010	<0.010	0.163	<0.010	9.78
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	1	BCHLM3-121	2.54	0.128	0.849	<0.010	0.012	<0.010	0.074	0.307	9.1
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	2	UstdLM3-121	2.1	<0.010	0.887	<0.010	<0.010	<0.010	0.158	<0.010	9.17
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	3	P10LM12	2.41	0.061	0.596	<0.010	0.121	<0.010	0.069	0.041	6.74
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	2	4	P08LM12	3.82	0.049	1.52	<0.010	0.071	<0.010	0.062	0.029	7.37
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	5	P10LM22	2.39	0.059	0.607	<0.010	0.118	<0.010	0.066	0.042	7.02
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	2	6	P11LM22	2.32	0.068	0.729	<0.010	0.179	<0.010	0.067	0.04	9.25
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	7	P14LM12	3.85	0.058	2.42	<0.010	0.077	<0.010	0.065	0.029	8
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	2	8	P01LM12	3.84	0.053	0.626	<0.010	0.077	<0.010	0.061	0.028	8.18
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	9	P09LM22	5.06	0.034	0.541	0.016	0.114	<0.010	0.086	<0.010	7.64
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	10	BCHLM3-122	2.56	0.129	0.889	<0.010	0.012	<0.010	0.075	0.319	9.92
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	11	UstdLM3-122	2.16	<0.010	0.914	<0.010	<0.010	<0.010	0.16	<0.010	10.55
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	12	P05LM12	2.17	0.058	0.636	<0.010	0.147	<0.010	0.055	0.031	7.41
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	2	13	P01LM22	3.97	0.051	0.608	<0.010	0.141	<0.010	0.059	0.027	7.44
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	14	P05LM22	2.13	0.059	0.629	<0.010	0.219	<0.010	0.058	0.033	7.53
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	2	15	P11LM12	2.35	0.066	0.74	<0.010	0.195	<0.010	0.068	0.041	8.39
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	16	P14LM22	3.85	0.056	2.51	<0.010	0.087	<0.010	0.064	0.028	7.29
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	2	17	P08LM22	3.86	0.048	1.55	<0.010	0.069	<0.010	0.061	0.029	7.04
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	18	P09LM12	5.1	0.036	0.534	0.016	0.116	<0.010	0.089	<0.010	6.69
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	19	BCHLM3-123	2.56	0.128	0.858	<0.010	0.011	<0.010	0.075	0.302	8.96
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	20	UstdLM3-123	2.13	<0.010	0.923	<0.010	<0.010	<0.010	0.162	<0.010	9.29
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	1	BCHLM3-211	2.5	0.126	0.826	<0.010	0.01	<0.010	0.072	0.3	9.48
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	2	UstdLM3-211	2.06	<0.010	0.877	<0.010	<0.010	<0.010	0.158	<0.010	9.77
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	1	3	P13LM11	2.12	0.057	0.631	<0.010	0.16	<0.010	0.055	0.033	7.66
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	1	4	P13LM21	2.15	0.055	0.644	<0.010	0.164	<0.010	0.053	0.032	7.56

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 1, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Al	Ba	Ca	Cd	Ce	Co	Cr	Cu	Fe
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	5	P03LM11	2.4	0.065	0.729	<0.010	0.167	<0.010	0.059	0.038	8.31
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	6	P07LM11	2.39	0.065	0.606	<0.010	0.089	<0.010	0.06	0.042	7.36
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	7	P06LM11	3.87	0.051	0.591	<0.010	0.077	<0.010	0.059	0.027	7.55
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	8	P07LM21	2.4	0.065	0.612	<0.010	0.089	<0.010	0.062	0.045	7.77
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	1	9	P04LM11	4.23	0.031	0.555	0.018	0.123	<0.010	0.097	<0.010	7.77
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	10	BCHLM3-212	2.53	0.127	0.838	<0.010	0.01	<0.010	0.073	0.303	10.21
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	11	UstdLM3-212	2.11	<0.010	0.91	<0.010	<0.010	<0.010	0.159	<0.010	10.29
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	12	P12LM21	3.8	0.05	1.53	<0.010	0.075	<0.010	0.063	0.026	7.3
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	1	13	P04LM21	4.23	0.031	0.569	0.018	0.19	<0.010	0.096	<0.010	7.04
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	14	P06LM21	3.84	0.05	0.601	<0.010	0.147	<0.010	0.058	0.027	7.21
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	15	P03LM21	2.36	0.066	0.731	<0.010	0.252	<0.010	0.059	0.038	7.62
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	16	P12LM11	3.83	0.052	1.6	<0.010	0.076	<0.010	0.064	0.026	6.73
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	1	17	P02LM11	5.85	0.031	0.477	0.012	0.104	<0.010	0.075	<0.010	5.64
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	1	18	P02LM21	5.74	0.032	0.479	0.013	0.179	<0.010	0.078	<0.010	5.69
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	19	BCHLM3-213	2.51	0.127	0.865	<0.010	0.01	<0.010	0.073	0.309	8.62
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	20	UstdLM3-213	2.08	<0.010	0.905	<0.010	<0.010	<0.010	0.157	<0.010	8.24
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	1	BCHLM3-221	2.56	0.126	0.858	<0.010	0.011	<0.010	0.073	0.309	8.79
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	2	UstdLM3-221	2.08	<0.010	0.877	<0.010	<0.010	<0.010	0.157	<0.010	9.47
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	3	P07LM12	2.36	0.066	0.587	<0.010	0.088	<0.010	0.06	0.043	7.09
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	2	4	P04LM12	4.2	0.032	0.546	0.019	0.122	<0.010	0.096	<0.010	7.27
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	5	P07LM22	2.39	0.065	0.587	<0.010	0.087	<0.010	0.061	0.045	7.25
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	6	P06LM22	3.83	0.052	0.566	<0.010	0.142	<0.010	0.058	0.027	7.29
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	2	7	P02LM12	5.86	0.032	0.455	0.013	0.101	<0.010	0.074	<0.010	6.09
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	2	8	P04LM22	4.21	0.033	0.538	0.019	0.186	<0.010	0.097	<0.010	7.08
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	9	P12LM12	3.82	0.053	1.56	<0.010	0.075	<0.010	0.064	0.026	6.97
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	10	BCHLM3-222	2.52	0.125	0.804	<0.010	0.01	<0.010	0.072	0.293	8.88
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	11	UstdLM3-222	2.05	<0.010	0.874	<0.010	<0.010	<0.010	0.157	<0.010	9.32
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	12	P03LM12	2.38	0.067	0.723	<0.010	0.168	<0.010	0.06	0.039	7.84
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	2	13	P02LM22	5.82	0.034	0.471	0.014	0.178	<0.010	0.079	<0.010	5.95
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	14	P12LM22	3.77	0.052	1.51	<0.010	0.074	<0.010	0.063	0.027	7.4
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	15	P03LM22	2.32	0.066	0.709	<0.010	0.248	<0.010	0.058	0.039	7.83
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	2	16	P13LM12	2.06	0.057	0.62	<0.010	0.159	<0.010	0.055	0.033	7.1
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	17	P06LM12	3.74	0.053	0.588	<0.010	0.078	<0.010	0.059	0.028	7.58
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	2	18	P13LM22	2.09	0.056	0.631	<0.010	0.165	<0.010	0.054	0.033	7.56
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	19	BCHLM3-223	2.47	0.128	0.839	<0.010	0.011	<0.010	0.073	0.3	8.24
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	20	UstdLM3-223	2.05	<0.010	0.891	<0.010	<0.010	<0.010	0.158	<0.010	8.13

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 2).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	K	La	Mg	Mn	Na	Nb	Ni	P	Pb
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	1	BCHLM2-111	2.49	<0.100	0.819	1.42	6.59	0.03	0.551	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	2	UstdLM2-111	2.22	<0.100	0.71	2.27	8.36	0.048	0.793	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	1	3	N02LM11	0.014	<0.100	0.263	1.51	9.83	<0.010	0.705	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	1	4	N07LM11	0.013	<0.100	0.296	1.66	10.1	<0.010	0.802	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	5	N03LM21	0.012	<0.100	0.273	1.5	10.8	<0.010	0.724	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	6	N03LM11	0.012	<0.100	0.276	1.5	10.8	<0.010	0.729	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	7	N13LM21	0.016	<0.100	0.326	1.71	10.5	<0.010	0.882	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	1	8	N12LM21	0.012	<0.100	0.271	1.43	9.96	<0.010	0.72	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	9	N14LM11	0.016	<0.100	0.316	1.63	9.95	<0.010	0.864	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	1	10	N15LM21	0.018	<0.100	0.295	1.6	10.1	<0.010	0.778	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	11	BCHLM2-112	2.51	<0.100	0.824	1.4	6.37	0.029	0.551	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	12	UstdLM1-112	2.22	<0.100	0.705	2.28	8.42	0.047	0.795	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	1	13	N12LM11	0.011	<0.100	0.271	1.47	9.83	<0.010	0.732	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	14	N14LM21	0.017	<0.100	0.322	1.75	9.67	<0.010	0.884	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	1	15	N05LM21	0.126	<0.100	0.619	1.76	9.26	<0.010	0.432	<0.100	0.026
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	1	16	N07LM21	0.017	<0.100	0.289	1.56	10.1	<0.010	0.777	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	17	N13LM11	0.016	<0.100	0.325	1.71	10.2	<0.010	0.879	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	1	18	N05LM11	0.117	<0.100	0.635	1.79	9.26	<0.010	0.447	<0.100	0.026
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	1	19	N02LM21	0.013	<0.100	0.271	1.53	10.19	<0.010	0.739	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	1	20	N15LM11	0.014	<0.100	0.305	1.65	9.9	<0.010	0.816	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	21	BCHLM2-113	2.51	<0.100	0.827	1.41	6.69	0.029	0.553	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	22	UstdLM2-113	2.22	<0.100	0.702	2.28	8.37	0.047	0.794	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	1	BCHLM2-121	2.49	<0.100	0.828	1.3	6.6	0.029	0.551	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	2	UstdLM2-121	2.21	<0.100	0.707	2.08	8.56	0.047	0.79	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	3	N13LM22	0.016	<0.100	0.326	1.61	10.3	<0.010	0.878	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	2	4	N07LM22	0.017	<0.100	0.286	1.55	10	<0.010	0.772	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	2	5	N05LM22	0.127	<0.100	0.62	1.74	9.29	<0.010	0.429	<0.100	0.024
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	2	6	N05LM12	0.114	<0.100	0.629	1.76	9.26	<0.010	0.444	<0.100	0.025
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	2	7	N02LM12	0.013	<0.100	0.257	1.39	10.1	<0.010	0.69	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	8	N03LM12	0.012	<0.100	0.273	1.44	10.8	<0.010	0.721	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	2	9	N02LM22	0.012	<0.100	0.267	1.41	10.1	<0.010	0.727	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	2	10	N15LM12	0.014	<0.100	0.299	1.57	9.75	<0.010	0.8	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	11	BCHLM2-122	2.47	<0.100	0.817	1.34	6.42	0.027	0.545	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	12	UstdLM2-122	2.18	<0.100	0.688	2.26	8.56	0.045	0.078	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	13	N03LM22	0.012	<0.100	0.264	1.5	10.6	<0.010	0.705	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	14	N14LM22	0.017	<0.100	0.317	1.68	9.81	<0.010	0.871	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	2	15	N07LM12	0.013	<0.100	0.299	1.59	9.97	<0.010	0.811	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	2	16	N12LM12	0.011	<0.100	0.274	1.42	9.8	<0.010	0.738	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	17	N14LM12	0.016	<0.100	0.325	1.63	9.69	<0.010	0.886	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	2	18	N12LM22	0.012	<0.100	0.276	1.38	9.77	<0.010	0.735	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	19	N13LM12	0.016	<0.100	0.329	1.83	9.96	<0.010	0.89	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	2	20	N15LM22	0.017	<0.100	0.297	1.72	9.83	<0.010	0.782	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	21	BCHLM2-123	2.45	<0.100	0.832	1.44	6.62	0.028	0.557	<0.100	<0.020

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 2, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	K	La	Mg	Mn	Na	Nb	Ni	P	Pb
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	22	UstdLM2-123	2.16	<0.100	0.724	2.3	8.42	0.047	0.804	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	1	BCHLM2-211	2.6	<0.100	0.826	1.35	6.62	0.032	0.557	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	2	UstdLM2-211	2.31	<0.100	0.704	2.21	8.55	0.051	0.799	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	1	3	N11LM21	0.119	<0.100	0.563	1.58	8.97	<0.010	0.399	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	4	N06LM11	0.091	<0.100	0.53	1.39	8.56	<0.010	0.38	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	1	5	N09LM11	0.01	<0.100	0.271	1.47	9.9	<0.010	0.726	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	1	6	N04LM11	0.021	<0.100	0.315	1.75	9.82	<0.010	0.836	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	1	7	N09LM21	0.008	<0.100	0.278	1.55	9.93	<0.010	0.753	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	1	8	N11LM11	0.116	<0.100	0.569	1.74	8.93	<0.010	0.408	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	9	N08LM11	0.019	<0.100	0.316	1.85	9.87	<0.010	0.849	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	10	BCHLM2-212	2.6	<0.100	0.818	1.42	6.59	0.031	0.553	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	11	UstdLM2-212	2.36	<0.100	0.719	2.19	8.58	0.051	0.812	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	1	12	N10LM21	0.012	<0.100	0.299	1.58	9.96	<0.010	0.808	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	13	N01LM11	0.013	<0.100	0.305	1.65	9.91	<0.010	0.819	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	14	N06LM21	0.106	<0.100	0.514	1.49	8.69	<0.010	0.362	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	15	N08LM21	0.018	<0.100	0.32	1.72	9.8	<0.010	0.86	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	1	16	N10LM11	0.078	<0.100	0.31	1.61	10.4	<0.010	0.877	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	1	17	N04LM21	0.016	<0.100	0.329	1.68	9.8	<0.010	0.89	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	18	N01LM21	0.013	<0.100	0.278	1.52	10.2	<0.010	0.74	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	19	BCHLM2-213	2.63	<0.100	0.824	1.41	6.66	0.031	0.558	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	20	UstdLM2-213	2.33	<0.100	0.71	2.35	8.49	0.051	0.81	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	1	BCHLM2-221	2.53	<0.100	0.836	1.31	6.91	0.028	0.557	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	2	UstdLM2-221	2.23	<0.100	0.721	2.22	9.13	0.047	0.805	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	3	N06LM22	0.104	<0.100	0.517	1.41	9.02	<0.010	0.357	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	2	4	N11LM22	0.11	<0.100	0.578	1.64	9.24	<0.010	0.405	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	5	N08LM12	0.018	<0.100	0.314	1.74	10.1	<0.010	0.839	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	6	N01LM22	0.012	<0.100	0.297	1.6	10.2	<0.010	0.789	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	7	N06LM12	0.087	<0.100	0.538	1.41	8.97	<0.010	0.38	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	2	8	N04LM12	0.021	<0.100	0.32	1.71	10.4	<0.010	0.843	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	2	9	N10LM12	0.073	<0.100	0.314	1.59	10.9	<0.010	0.881	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	10	BCHLM2-222	2.53	<0.100	0.843	1.31	7.1	0.027	0.562	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	11	UstdLM2-222	2.26	<0.100	0.731	2.2	9.17	0.047	0.812	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	12	N09LM12	0.008	<0.100	0.282	1.41	10.7	<0.010	0.747	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	13	N08LM22	0.015	<0.100	0.33	1.71	10.4	<0.010	0.877	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	2	14	N04LM22	0.014	<0.100	0.348	1.57	10.3	<0.010	0.926	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	2	15	N09LM22	0.007	<0.100	0.298	1.36	10.4	<0.010	0.796	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	2	16	N10LM22	0.01	<0.100	0.314	1.48	10.4	<0.010	0.838	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	17	N01LM12	0.012	<0.100	0.315	1.56	10.4	<0.010	0.84	<0.100	<0.020
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	2	18	N11LM12	0.106	<0.100	0.6	1.55	9.61	<0.010	0.419	<0.100	<0.020
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	19	BCHLM2-223	2.48	<0.100	0.888	1.34	6.93	0.028	0.586	<0.100	<0.020
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	20	UstdLM2-223	2.17	<0.100	0.767	2.18	9.21	0.048	0.851	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	1	BCHLM3-111	2.54	<0.100	0.817	1.4	6.79	0.033	0.549	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	2	UstdLM3-111	2.38	<0.100	0.681	2.31	8.98	0.049	0.763	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	1	3	P11LM11	0.05	<0.100	0.091	2.26	9.35	0.512	0.251	<0.100	0.109

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 2, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	K	La	Mg	Mn	Na	Nb	Ni	P	Pb
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	4	P05LM21	0.048	<0.100	0.089	1.94	5.56	0.419	0.29	<0.100	0.095
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	1	5	P08LM21	0.077	<0.100	0.268	1.93	10.85	0.022	0.782	<0.100	0.034
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	1	6	P01LM11	0.063	<0.100	0.29	1.98	10.83	0.021	0.856	<0.100	0.034
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	1	7	P08LM11	0.066	<0.100	0.282	2	10.77	0.023	0.837	<0.100	0.037
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	1	8	P01LM21	0.067	<0.100	0.289	2	10.91	0.021	0.851	<0.100	0.034
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	9	P05LM11	0.043	<0.100	0.092	2.05	5.78	0.455	0.23	<0.100	0.097
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	10	BCHLM3-112	2.45	<0.100	0.853	1.48	6.8	0.034	0.57	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	11	UstdLM3-112	2.28	<0.100	0.716	2.42	9.07	0.05	0.797	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	12	P09LM21	0.018	<0.100	0.288	1.75	10.93	<0.020	0.764	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	13	P09LM11	0.016	<0.100	0.301	1.77	10.89	<0.020	0.806	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	14	P10LM11	0.047	<0.100	0.088	2.84	6.14	0.585	0.486	<0.100	0.088
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	15	P10LM21	0.052	<0.100	0.084	2.79	6.04	0.554	0.458	<0.100	0.083
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	16	P14LM11	0.06	<0.100	0.291	2.05	11.15	0.026	0.875	<0.100	0.038
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	1	17	P11LM21	0.045	<0.100	0.095	2.34	9.75	0.521	0.259	<0.100	0.112
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	18	P14LM21	0.061	<0.100	0.288	2.02	11.18	0.026	0.866	<0.100	0.038
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	19	BCHLM3-113	2.401	<0.100	0.855	1.43	7.13	0.033	0.57	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	20	UstdLM3-113	2.248	<0.100	0.715	2.33	8.99	0.05	0.798	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	1	BCHLM3-121	2.61	<0.100	0.833	1.37	6.74	0.031	0.561	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	2	UstdLM3-121	2.41	<0.100	0.691	2.18	8.7	0.048	0.78	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	3	P10LM12	0.048	<0.100	0.086	2.61	5.9	0.599	0.475	<0.100	0.086
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	2	4	P08LM12	0.068	<0.100	0.272	1.85	10.49	0.02	0.816	<0.100	0.036
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	5	P10LM22	0.057	<0.100	0.082	2.72	5.79	0.577	0.455	<0.100	0.082
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	2	6	P11LM22	0.051	<0.100	0.095	2.31	9	0.548	0.261	<0.100	0.112
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	7	P14LM12	0.067	<0.100	0.289	2.04	10.31	0.024	0.876	<0.100	0.039
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	2	8	P01LM12	0.07	<0.100	0.291	2.08	10.32	0.019	0.868	<0.100	0.035
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	9	P09LM22	0.02	<0.100	0.287	1.88	10.09	<0.020	0.767	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	10	BCHLM3-122	2.73	<0.100	0.844	1.48	6.63	0.031	0.569	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	11	UstdLM3-122	2.48	<0.100	0.697	2.49	8.44	0.048	0.782	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	12	P05LM12	0.045	<0.100	0.09	1.93	5.76	0.468	0.227	<0.100	0.097
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	2	13	P01LM22	0.069	<0.100	0.285	1.93	11.12	0.019	0.844	<0.100	0.033
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	14	P05LM22	0.05	<0.100	0.09	1.9	5.49	0.44	0.294	<0.100	0.097
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	2	15	P11LM12	0.054	<0.100	0.092	2.12	9.29	0.539	0.254	<0.100	0.109
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	16	P14LM22	0.068	<0.100	0.28	1.88	10.72	0.024	0.846	<0.100	0.037
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	2	17	P08LM22	0.08	<0.100	0.265	1.79	10.84	0.019	0.784	<0.100	0.036
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	18	P09LM12	0.017	<0.100	0.296	1.65	10.5	<0.020	0.797	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	19	BCHLM3-123	2.65	<0.100	0.838	1.35	6.72	0.031	0.567	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	20	UstdLM3-123	2.5	<0.100	0.7	2.22	8.85	0.049	0.788	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	1	BCHLM3-211	2.54	<0.100	0.829	1.43	6.47	0.036	0.557	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	2	UstdLM3-211	2.36	<0.100	0.691	2.31	8.51	0.052	0.775	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	1	3	P13LM11	0.037	<0.100	0.081	1.94	9.18	0.461	0.225	<0.100	0.1
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	1	4	P13LM21	0.042	<0.100	0.079	1.92	9.22	0.447	0.218	<0.100	0.096
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	5	P03LM11	0.045	<0.100	0.093	2.2	6.35	0.521	0.253	<0.100	0.109
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	6	P07LM11	0.041	<0.100	0.082	2.74	9.04	0.598	0.488	<0.100	0.086
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	7	P06LM11	0.055	<0.100	0.291	1.91	11.16	0.026	0.881	<0.100	0.036

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 2, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	K	La	Mg	Mn	Na	Nb	Ni	P	Pb
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	8	P07LM21	0.045	<0.100	0.082	2.89	9.05	0.602	0.483	<0.100	0.087
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	1	9	P04LM11	0.014	<0.100	0.317	1.89	11.17	0.009	0.867	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	10	BCHLM3-212	2.58	<0.100	0.836	1.52	6.48	0.035	0.559	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	11	UstdLM3-212	2.43	<0.100	0.698	2.44	8.65	0.053	0.78	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	12	P12LM21	0.06	<0.100	0.28	1.8	10.7	0.028	0.845	<0.100	0.034
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	1	13	P04LM21	0.013	<0.100	0.316	1.7	11.27	0.01	0.865	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	14	P06LM21	0.059	<0.100	0.287	1.84	11.03	0.026	0.856	<0.100	0.035
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	15	P03LM21	0.046	<0.100	0.094	2.02	6.45	0.529	0.255	<0.100	0.108
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	16	P12LM11	0.058	<0.100	0.289	1.71	10.99	0.029	0.868	<0.100	0.035
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	1	17	P02LM11	0.013	<0.100	0.266	1.39	9.17	<0.020	0.705	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	1	18	P02LM21	0.009	<0.100	0.279	1.4	8.8	<0.020	0.753	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	19	BCHLM3-213	2.63	<0.100	0.826	1.3	6.7	0.036	0.558	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	20	UstdLM3-213	2.42	<0.100	0.686	1.97	8.81	0.052	0.769	<0.100	<0.020
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	1	BCHLM3-221	2.63	<0.100	0.817	1.33	6.92	0.038	0.554	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	2	UstdLM3-221	2.36	<0.100	0.684	2.27	8.61	0.053	0.767	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	3	P07LM12	0.043	<0.100	0.081	2.67	8.93	0.587	0.482	<0.100	0.086
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	2	4	P04LM12	0.016	<0.100	0.313	1.78	11.17	<0.020	0.856	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	5	P07LM22	0.045	<0.100	0.081	2.71	9.03	0.588	0.479	<0.100	0.085
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	6	P06LM22	0.056	<0.100	0.284	1.87	11.11	0.028	0.851	<0.100	0.037
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	2	7	P02LM12	0.014	<0.100	0.262	1.5	8.86	<0.020	0.696	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	2	8	P04LM22	0.015	<0.100	0.314	1.74	11.4	<0.020	0.857	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	9	P12LM12	0.057	<0.100	0.283	1.78	11.01	0.03	0.858	<0.100	0.036
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	10	BCHLM3-222	2.5	<0.100	0.824	1.35	6.68	0.037	0.551	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	11	UstdLM3-222	2.35	<0.100	0.692	2.24	8.51	0.053	0.773	<0.100	<0.020
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	12	P03LM12	0.048	<0.100	0.093	2.1	6.34	0.524	0.257	<0.100	0.11
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	2	13	P02LM22	0.012	<0.100	0.279	1.47	8.89	<0.020	0.755	<0.100	<0.020
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	14	P12LM22	0.059	<0.100	0.279	1.86	10.64	0.03	0.844	<0.100	0.036
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	15	P03LM22	0.047	<0.100	0.092	2.09	6.19	0.519	0.253	<0.100	0.109
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	2	16	P13LM12	0.04	<0.100	0.08	1.81	8.96	0.454	0.223	<0.100	0.098
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	17	P06LM12	0.059	<0.100	0.291	1.73	10.98	0.029	0.882	<0.100	0.037
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	2	18	P13LM22	0.044	<0.100	0.078	1.7	9.13	0.444	0.217	<0.100	0.097
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	19	BCHLM3-223	2.58	<0.100	0.832	1.24	6.64	0.038	0.561	<0.100	<0.020
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	20	UstdLM3-223	2.42	<0.100	0.697	1.95	8.71	0.054	0.777	<0.100	<0.020

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 3).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Pb	S	Si	Sr	Th	Ti	U	Zn	Zr
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	1	BCHLM2-111	<0.020	<0.100	23.9	<0.010	<0.100	0.387	<0.100	<0.010	0.062
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	2	UstdLM2-111	<0.020	<0.100	21.2	<0.010	<0.100	0.563	1.93	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	1	3	N02LM11	<0.020	<0.100	21.3	0.096	<0.100	<0.010	2.26	<0.010	0.065
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	1	4	N07LM11	<0.020	<0.100	21.3	0.108	<0.100	0.01	2.59	<0.010	0.073
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	5	N03LM21	<0.020	<0.100	20.7	0.089	<0.100	<0.010	2.34	<0.010	0.068
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	6	N03LM11	<0.020	<0.100	20.8	0.09	<0.100	0.01	2.34	<0.010	0.068
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	7	N13LM21	<0.020	0.102	20.9	0.109	<0.100	0.011	2.74	<0.010	0.08
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	1	8	N12LM21	<0.020	<0.100	21.2	0.09	<0.100	0.011	2.26	<0.010	0.067
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	9	N14LM11	<0.020	0.102	20.3	0.112	<0.100	0.011	2.67	<0.010	0.082
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	1	10	N15LM21	<0.020	<0.100	20.9	0.108	<0.100	0.01	2.58	<0.010	0.071
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	11	BCHLM2-112	<0.020	<0.100	23.6	<0.010	<0.100	0.386	<0.100	<0.010	0.063
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	12	UstdLM1-112	<0.020	<0.100	21.4	<0.010	<0.100	0.564	1.93	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	1	13	N12LM11	<0.020	<0.100	21.4	0.091	<0.100	0.011	2.29	<0.010	0.065
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	14	N14LM21	<0.020	0.104	20.8	0.113	<0.100	0.011	2.69	<0.010	0.082
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	1	15	N05LM21	0.026	0.127	19.8	<0.010	<0.100	0.013	2.79	<0.010	0.02
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	1	16	N07LM21	<0.020	<0.100	20.8	0.11	<0.100	0.011	2.55	<0.010	0.071
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	17	N13LM11	<0.020	0.1	20.8	0.111	<0.100	0.011	2.71	<0.010	0.079
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	1	18	N05LM11	0.026	0.124	19.8	<0.010	<0.100	0.014	2.81	<0.010	0.021
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	1	19	N02LM21	<0.020	<0.100	21.9	0.099	<0.100	<0.010	2.38	<0.010	0.062
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	1	20	N15LM11	<0.020	0.102	21	0.107	<0.100	0.01	2.56	<0.010	0.072
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	21	BCHLM2-113	<0.020	<0.100	24.1	<0.010	<0.100	0.388	<0.100	<0.010	0.064
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	22	UstdLM2-113	<0.020	<0.100	21.3	<0.010	<0.100	0.558	1.94	<0.010	<0.010
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	1	BCHLM2-121	<0.020	<0.100	23.2	<0.010	<0.100	0.389	<0.100	<0.010	0.062
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	2	UstdLM2-121	<0.020	<0.100	21.5	<0.010	<0.100	0.564	1.94	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	3	N13LM22	<0.020	<0.100	21.2	0.108	<0.100	<0.010	2.69	<0.010	0.078
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	2	4	N07LM22	<0.020	<0.100	20.6	0.109	<0.100	<0.010	2.54	<0.010	0.07
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	2	5	N05LM22	0.024	0.122	19.7	<0.010	<0.100	0.012	2.8	<0.010	0.019
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	1	2	6	N05LM12	0.025	0.123	19.7	<0.010	<0.100	0.013	2.8	<0.010	0.02
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	2	7	N02LM12	<0.020	<0.100	20.9	0.095	<0.100	<0.010	2.29	<0.010	0.063
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	8	N03LM12	<0.020	<0.100	20.4	0.088	<0.100	<0.010	2.33	<0.010	0.067
SRNL-SCS-2008-00003	2	SB5	SB5-01	1	2	9	N02LM22	<0.020	<0.100	21	0.096	<0.100	<0.010	2.3	<0.010	0.061
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	2	10	N15LM12	<0.020	<0.100	20.4	0.105	<0.100	<0.010	2.52	<0.010	0.07
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	11	BCHLM2-122	<0.020	<0.100	23.2	<0.010	<0.100	0.384	<0.100	<0.010	0.062
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	12	UstdLM2-122	<0.020	<0.100	21.5	<0.010	<0.100	0.552	1.98	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	13	N03LM22	<0.020	<0.100	20.5	0.089	<0.100	<0.010	2.33	<0.010	0.065
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	14	N14LM22	<0.020	<0.100	20.7	0.112	<0.100	0.01	2.73	<0.010	0.081
SRNL-SCS-2008-00003	2	SB5	SB5-05	1	2	15	N07LM12	<0.020	<0.100	20.8	0.106	<0.100	<0.010	2.56	<0.010	0.073
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	2	16	N12LM12	<0.020	<0.100	21.2	0.089	<0.100	<0.010	2.28	<0.010	0.066
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	17	N14LM12	<0.020	0.1	20.8	0.111	<0.100	<0.010	2.66	<0.010	0.082
SRNL-SCS-2008-00003	2	SB5	SB5-02	1	2	18	N12LM22	<0.020	<0.100	20.8	0.09	<0.100	<0.010	2.24	<0.010	0.067
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	19	N13LM12	<0.020	<0.100	21.1	0.109	<0.100	<0.010	2.72	<0.010	0.079
SRNL-SCS-2008-00003	2	SB5	SB5-07	1	2	20	N15LM22	<0.020	<0.100	21.4	0.106	<0.100	<0.010	2.57	<0.010	0.071
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	21	BCHLM2-123	<0.020	<0.100	24.5	<0.010	<0.100	0.387	<0.100	<0.010	0.063
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	22	UstdLM2-123	<0.020	<0.100	21.5	<0.010	<0.100	0.562	1.95	<0.010	<0.010
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	1	BCHLM2-211	<0.020	<0.100	23.5	<0.010	<0.100	0.397	<0.100	<0.010	0.065

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 3, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Pb	S	Si	Sr	Th	Ti	U	Zn	Zr
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	2	UstdLM2-211	<0.020	<0.100	21.2	<0.010	<0.100	0.575	1.94	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	1	3	N11LM21	<0.020	0.116	21	<0.010	<0.100	0.013	2.51	<0.010	0.019
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	4	N06LM11	<0.020	0.104	22	<0.010	<0.100	0.015	2.21	<0.010	0.018
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	1	5	N09LM11	<0.020	<0.100	20.8	0.099	<0.100	0.01	2.29	<0.010	0.069
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	1	6	N04LM11	<0.020	0.104	21	0.123	<0.100	0.012	2.69	<0.010	0.085
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	1	7	N09LM21	<0.020	<0.100	21.3	0.097	<0.100	0.011	2.34	<0.010	0.071
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	1	8	N11LM11	<0.020	0.117	21.9	<0.010	<0.100	0.013	2.57	<0.010	0.019
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	9	N08LM11	<0.020	0.11	22.2	0.122	<0.100	0.013	2.75	<0.010	0.08
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	10	BCHLM2-212	<0.020	<0.100	24.1	<0.010	<0.100	0.393	<0.100	<0.010	0.065
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	11	UstdLM2-212	<0.020	<0.100	21.1	<0.010	<0.100	0.585	1.94	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	1	12	N10LM21	<0.020	<0.100	21.2	0.104	<0.100	0.012	2.49	<0.010	0.072
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	13	N01LM11	<0.020	0.102	21.2	0.111	<0.100	0.011	2.55	<0.010	0.076
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	14	N06LM21	<0.020	0.103	22.8	<0.010	<0.100	0.015	2.26	<0.010	0.017
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	15	N08LM21	<0.020	0.107	21.4	0.121	<0.100	0.012	2.69	<0.010	0.081
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	1	16	N10LM11	<0.020	0.105	20.7	0.11	<0.100	0.012	2.56	<0.010	0.075
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	1	17	N04LM21	<0.020	0.107	20.7	0.118	<0.100	0.012	2.68	<0.010	0.089
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	18	N01LM21	<0.020	<0.100	21.7	0.106	<0.100	0.01	2.65	<0.010	0.071
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	19	BCHLM2-213	<0.020	<0.100	24.2	<0.010	<0.100	0.399	<0.100	<0.010	0.066
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	20	UstdLM2-213	<0.020	<0.100	21.7	<0.010	<0.100	0.578	1.96	<0.010	<0.010
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	1	BCHLM2-221	<0.020	<0.100	23.7	<0.010	<0.100	0.394	<0.100	<0.010	0.062
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	2	UstdLM2-221	<0.020	<0.100	22	<0.010	<0.100	0.575	2.11	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	3	N06LM22	<0.020	0.104	22.9	<0.010	<0.100	0.012	2.41	<0.010	0.014
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	2	4	N11LM22	<0.020	0.115	21.9	<0.010	<0.100	0.01	2.71	<0.010	0.016
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	5	N08LM12	<0.020	0.107	22.1	0.118	<0.100	<0.010	2.88	<0.010	0.077
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	6	N01LM22	<0.020	<0.100	21.7	0.107	<0.100	<0.010	2.69	<0.010	0.072
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	7	N06LM12	<0.020	0.104	22.9	<0.010	<0.100	0.012	2.38	<0.010	0.016
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	2	8	N04LM12	<0.020	0.107	21.6	0.12	<0.100	<0.010	2.87	<0.010	0.083
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	2	9	N10LM12	<0.020	0.101	21.3	0.105	<0.100	<0.010	2.71	<0.010	0.073
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	10	BCHLM2-222	<0.020	<0.100	24.2	<0.010	<0.100	0.396	<0.100	<0.010	0.063
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	11	UstdLM2-222	<0.020	<0.100	22.1	<0.010	<0.100	0.579	2.08	<0.010	<0.010
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	2	12	N09LM12	<0.020	<0.100	21.5	0.093	<0.100	<0.010	2.46	<0.010	0.068
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	13	N08LM22	<0.020	0.104	22.1	0.111	<0.100	<0.010	2.86	<0.010	0.078
SRNL-SCS-2008-00003	2	SB5	SB5-09	2	2	14	N04LM22	<0.020	0.108	20.7	0.112	<0.100	<0.010	2.82	<0.010	0.088
SRNL-SCS-2008-00003	2	SB5	SB5-03	2	2	15	N09LM22	<0.020	<0.100	20.8	0.092	<0.100	<0.010	2.42	<0.010	0.071
SRNL-SCS-2008-00003	2	SB5	SB5-08	2	2	16	N10LM22	<0.020	<0.100	21.3	0.098	<0.100	<0.010	2.57	<0.010	0.071
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	17	N01LM12	<0.020	0.103	21.4	0.106	<0.100	<0.010	2.65	<0.010	0.075
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	2	2	18	N11LM12	<0.020	0.118	21.4	<0.010	<0.100	0.01	2.66	<0.010	0.017
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	19	BCHLM2-223	<0.020	<0.100	24.1	<0.010	<0.100	0.407	<0.100	<0.010	0.064
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	20	UstdLM2-223	<0.020	<0.100	22	<0.010	<0.100	0.592	2.09	<0.010	<0.010
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	1	BCHLM3-111	<0.020	<0.100	24.4	<0.010	<0.100	0.388	<0.100	<0.010	0.063
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	2	UstdLM3-111	<0.020	<0.100	21.9	<0.010	<0.100	0.55	2.07	<0.010	<0.010
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	1	3	P11LM11	0.109	<0.100	23.2	<0.010	0.806	1.71	0.417	0.017	0.441
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	4	P05LM21	0.095	<0.100	25.2	<0.010	0.713	1.51	0.375	0.016	0.369
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	1	5	P08LM21	0.034	0.165	22.2	<0.010	<0.100	0.194	2.49	0.033	0.08
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	1	6	P01LM11	0.034	0.169	22.2	<0.010	<0.100	0.199	2.53	0.033	0.078

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 3, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Pb	S	Si	Sr	Th	Ti	U	Zn	Zr
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	1	7	P08LM11	0.037	0.172	22.2	<0.010	<0.100	0.203	2.49	0.033	0.081
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	1	8	P01LM21	0.034	0.17	22.5	<0.010	<0.100	0.199	2.52	0.034	0.078
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	9	P05LM11	0.097	<0.100	25.4	<0.010	0.716	1.51	0.374	0.017	0.397
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	10	BCHLM3-112	<0.020	<0.100	24.9	<0.010	<0.100	0.395	<0.100	<0.010	0.066
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	11	UstdLM3-112	<0.020	<0.100	22.2	<0.010	<0.100	0.559	2.11	<0.010	<0.010
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	12	P09LM21	<0.020	<0.100	21.8	0.101	<0.100	0.013	2.76	<0.010	0.071
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	13	P09LM11	<0.020	0.102	21.9	0.1	<0.100	0.013	2.77	<0.010	0.073
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	14	P10LM11	0.088	<0.100	23.8	<0.010	0.791	1.27	0.752	0.028	0.513
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	15	P10LM21	0.083	<0.100	23.7	<0.010	0.755	1.21	0.715	0.027	0.492
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	16	P14LM11	0.038	0.181	22.3	<0.010	<0.100	0.217	2.6	0.036	0.085
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	1	17	P11LM21	0.112	<0.100	24	<0.010	0.819	1.73	0.413	0.017	0.446
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	18	P14LM21	0.038	0.179	22.2	<0.010	<0.100	0.215	2.59	0.036	0.084
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	19	BCHLM3-113	<0.020	<0.100	24.8	<0.010	<0.100	0.393	<0.100	<0.010	0.065
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	20	UstdLM3-113	<0.020	<0.100	22	<0.010	<0.100	0.556	2.1	<0.010	<0.010
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	1	BCHLM3-121	<0.020	<0.100	23.8	<0.010	<0.100	0.393	<0.100	<0.010	0.064
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	2	UstdLM3-121	<0.020	<0.100	21.2	<0.010	<0.100	0.551	2.02	<0.010	<0.010
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	3	P10LM12	0.086	<0.100	22.5	<0.010	0.792	1.28	0.776	0.027	0.513
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	2	4	P08LM12	0.036	0.17	21.3	<0.010	<0.100	0.201	2.38	0.032	0.08
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	5	P10LM22	0.082	<0.100	22.8	<0.010	0.765	1.24	0.751	0.027	0.5
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	2	6	P11LM22	0.112	<0.100	23.2	<0.010	0.839	1.73	0.437	0.017	0.46
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	7	P14LM12	0.039	0.183	21.6	<0.010	<0.100	0.222	2.45	0.035	0.087
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	2	8	P01LM12	0.035	0.179	22.3	<0.010	<0.100	0.205	2.46	0.033	0.08
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	9	P09LM22	<0.020	0.101	21.7	0.109	<0.100	0.013	2.65	<0.010	0.074
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	10	BCHLM3-122	<0.020	<0.100	24.5	<0.010	<0.100	0.401	<0.100	<0.010	0.066
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	11	UstdLM3-122	<0.020	<0.100	22.2	<0.010	<0.100	0.561	2.05	<0.010	<0.010
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	12	P05LM12	0.097	<0.100	24.8	<0.010	0.723	1.53	0.383	0.017	0.4
SRNL-SCS-2008-00003	3	SB5	SB5-20	1	2	13	P01LM22	0.033	0.175	22.2	<0.010	<0.100	0.2	2.52	0.033	0.079
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	14	P05LM22	0.097	<0.100	25	<0.010	0.729	1.54	0.388	0.016	0.377
SRNL-SCS-2008-00003	3	HWL	HWL-28	1	2	15	P11LM12	0.109	<0.100	22.7	<0.010	0.828	1.78	0.436	0.017	0.457
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	16	P14LM22	0.037	0.183	21.1	<0.010	<0.100	0.216	2.47	0.034	0.085
SRNL-SCS-2008-00003	3	SB5	SB5-14	1	2	17	P08LM22	0.036	0.173	21.3	<0.010	<0.100	0.196	2.42	0.032	0.08
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	18	P09LM12	<0.020	0.104	21	0.105	<0.100	0.013	2.64	<0.010	0.074
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	19	BCHLM3-123	<0.020	<0.100	23.7	<0.010	<0.100	0.398	<0.100	<0.010	0.065
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	20	UstdLM3-123	<0.020	<0.100	21.4	<0.010	<0.100	0.562	2.05	<0.010	<0.010
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	1	BCHLM3-211	<0.020	<0.100	23.9	<0.010	<0.100	0.388	<0.100	<0.010	0.062
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	2	UstdLM3-211	<0.020	<0.100	21.4	<0.010	<0.100	0.547	1.98	<0.010	<0.010
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	1	3	P13LM11	0.1	<0.100	24.8	<0.010	0.714	1.54	0.375	0.017	0.39
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	1	4	P13LM21	0.096	<0.100	24.9	<0.010	0.696	1.51	0.369	0.015	0.382
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	5	P03LM11	0.109	<0.100	23.1	<0.010	0.818	1.72	0.432	0.016	0.443
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	6	P07LM11	0.086	<0.100	23.4	<0.010	0.809	1.33	0.754	0.028	0.505
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	7	P06LM11	0.036	0.172	21.2	<0.010	<0.100	0.212	2.48	0.034	0.085
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	8	P07LM21	0.087	<0.100	24.1	<0.010	0.811	1.34	0.756	0.028	0.507
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	1	9	P04LM11	<0.020	0.105	21	0.108	<0.100	0.011	2.82	<0.010	0.078
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	10	BCHLM3-212	<0.020	<0.100	24.8	<0.010	<0.100	0.391	<0.100	<0.010	0.063
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	11	UstdLM3-212	<0.020	<0.100	22.1	<0.010	<0.100	0.557	2.05	<0.010	<0.010

Table A2. Measured Elemental Concentrations (wt%) for Samples Prepared Using Lithium Metaborate (Part 3, continued).

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	Pb	S	Si	Sr	Th	Ti	U	Zn	Zr
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	12	P12LM21	0.034	0.174	21	<0.010	<0.100	0.217	2.41	0.032	0.081
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	1	13	P04LM21	<0.020	0.104	20.3	0.11	<0.100	0.013	2.81	<0.010	0.077
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	14	P06LM21	0.035	0.165	20.7	<0.010	<0.100	0.211	2.44	0.033	0.083
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	15	P03LM21	0.108	<0.100	22.1	<0.010	0.829	1.73	0.438	0.017	0.448
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	16	P12LM11	0.035	0.173	20.3	<0.010	<0.100	0.223	2.45	0.033	0.087
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	1	17	P02LM11	<0.020	<0.100	20.8	0.092	<0.100	<0.010	2.37	<0.010	0.067
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	1	18	P02LM21	<0.020	<0.100	20.6	0.09	<0.100	<0.010	2.33	<0.010	0.07
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	19	BCHLM3-213	<0.020	<0.100	23.2	<0.010	<0.100	0.396	<0.100	<0.010	0.064
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	20	UstdLM3-213	<0.020	<0.100	20.2	<0.010	<0.100	0.552	1.98	<0.010	<0.010
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	1	BCHLM3-221	<0.020	<0.100	23.8	<0.010	<0.100	0.391	<0.100	<0.010	0.063
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	2	UstdLM3-221	<0.020	<0.100	21.5	<0.010	<0.100	0.546	2.04	<0.010	<0.010
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	3	P07LM12	0.086	<0.100	23.2	<0.010	0.795	1.32	0.737	0.029	0.49
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	2	4	P04LM12	<0.020	0.102	20.7	0.107	<0.100	0.011	2.79	<0.010	0.077
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	5	P07LM22	0.085	<0.100	23.5	<0.010	0.79	1.31	0.731	0.029	0.49
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	6	P06LM22	0.037	0.165	20.9	<0.010	<0.100	0.204	2.42	0.034	0.083
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	2	7	P02LM12	<0.020	<0.100	21.5	0.088	<0.100	<0.010	2.37	<0.010	0.066
SRNL-SCS-2008-00003	3	SB5	SB5-19	2	2	8	P04LM22	<0.020	0.104	20.5	0.105	<0.100	0.013	2.78	<0.010	0.076
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	9	P12LM12	0.036	0.169	20.7	<0.010	<0.100	0.219	2.45	0.034	0.085
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	10	BCHLM3-222	<0.020	<0.100	23.5	<0.010	<0.100	0.384	<0.100	<0.010	0.062
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	11	UstdLM3-222	<0.020	<0.100	21.1	<0.010	<0.100	0.552	1.99	<0.010	<0.010
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	12	P03LM12	0.11	<0.100	22.7	<0.010	0.822	1.72	0.432	0.018	0.44
SRNL-SCS-2008-00003	3	SB5	SB5-17	2	2	13	P02LM22	<0.020	<0.100	21.3	0.09	<0.100	<0.010	2.38	<0.010	0.072
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	14	P12LM22	0.036	0.168	20.8	<0.010	<0.100	0.217	2.41	0.033	0.082
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	15	P03LM22	0.109	<0.100	22.2	<0.010	0.811	1.71	0.428	0.017	0.438
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	2	16	P13LM12	0.098	<0.100	24	<0.010	0.704	1.53	0.369	0.018	0.387
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	17	P06LM12	0.037	0.174	20.1	<0.010	<0.100	0.211	2.39	0.035	0.085
SRNL-SCS-2008-00003	3	HWL	HWL-27	2	2	18	P13LM22	0.097	<0.100	24.6	<0.010	0.692	1.5	0.365	0.016	0.377
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	19	BCHLM3-223	<0.020	<0.100	22.6	<0.010	<0.100	0.392	<0.100	<0.010	0.065
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	20	UstdLM3-223	<0.020	<0.100	21	<0.010	<0.100	0.553	1.96	<0.010	<0.010

Table A3. Measured Elemental Concentrations (wt%) for Samples in SRNL-SCS-2008-00003 Prepared Using Peroxide Fusion.

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	B	Li
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	1	BCHPF2-111	2.45	1.97
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	2	UstdPF2-111	2.8	1.35
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	3	N03PF11	3.13	1.46
SRNL-SCS-2008-00003	2	SB5	SB5-09	1	1	4	N04PF21	2.02	1.98
SRNL-SCS-2008-00003	2	SB5	SB5-08	1	1	5	N10PF21	3.12	1.42
SRNL-SCS-2008-00003	2	SB5	SB5-09	1	1	6	N04PF11	1.99	1.98
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	1	7	N03PF21	3.26	1.43
SRNL-SCS-2008-00003	2	SB5	SB5-08	1	1	8	N10PF11	3.14	1.42
SRNL-SCS-2008-00003	2	SB5	SB5-03	1	1	9	N09PF11	2.56	1.6
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	10	BCHPF2-112	2.3	1.91
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	11	UstdPF2-112	2.78	1.35
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	1	1	12	N11PF11	2.86	2.32
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	13	N13PF21	3.15	1.45
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	14	N14PF11	2.68	1.68
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	1	15	N13PF11	3.11	1.43
SRNL-SCS-2008-00003	2	SB5	SB5-03	1	1	16	N09PF21	2.65	1.68
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	1	1	17	N11PF21	2.7	2.32
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	1	18	N14PF21	2.62	1.69
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	1	19	BCHPF2-113	2.36	1.95
SRNL-SCS-2008-00003	2	Ustd	U std	1	1	20	UstdPF2-113	2.71	1.34
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	1	BCHPF1-121	2.5	1.98
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	2	UstdPF1-121	2.85	1.36
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	3	N13PF22	3.16	1.45
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	4	N14PF12	2.72	1.7
SRNL-SCS-2008-00003	2	SB5	SB5-03	1	2	5	N09PF22	2.76	1.72
SRNL-SCS-2008-00003	2	SB5	SB5-11	1	2	6	N14PF22	2.74	1.7
SRNL-SCS-2008-00003	2	SB5	SB5-03	1	2	7	N09PF12	2.6	1.62
SRNL-SCS-2008-00003	2	SB5	SB5-08	1	2	8	N10PF12	3.18	1.45
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	1	2	9	N11PF12	2.84	2.32
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	10	BCHPF1-122	2.44	1.97
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	11	UstdPF1-122	2.83	1.36
SRNL-SCS-2008-00003	2	SB5	SB5-08	1	2	12	N10PF22	3.17	1.44
SRNL-SCS-2008-00003	2	SB4	SB4VAR32	1	2	13	N11PF22	2.79	2.36
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	14	N03PF12	3.19	1.45
SRNL-SCS-2008-00003	2	SB5	SB5-04	1	2	15	N03PF22	3.22	1.45
SRNL-SCS-2008-00003	2	SB5	SB5-09	1	2	16	N04PF22	1.98	2
SRNL-SCS-2008-00003	2	SB5	SB5-12	1	2	17	N13PF12	3.06	1.45
SRNL-SCS-2008-00003	2	SB5	SB5-09	1	2	18	N04PF12	2	2
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	1	2	19	BCHPF2-123	2.37	1.94
SRNL-SCS-2008-00003	2	Ustd	U std	1	2	20	UstdPF1-123	2.79	1.36
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	1	BCHPF2-211	2.5	1.98
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	2	UstdPF2-211	2.84	1.37
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	3	N01PF21	2.19	2
SRNL-SCS-2008-00003	2	SB5	SB5-05	2	1	4	N07PF11	2.01	2.02
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	2	1	5	N05PF11	2.67	2.23
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	6	N08PF21	2.17	2
SRNL-SCS-2008-00003	2	SB5	SB5-02	2	1	7	N12PF11	2.15	2.01
SRNL-SCS-2008-00003	2	SB5	SB5-07	2	1	8	N15PF21	2.62	1.7
SRNL-SCS-2008-00003	2	SB5	SB5-01	2	1	9	N02PF11	1.89	1.96
SRNL-SCS-2008-00003	2	SB5	SB5-02	2	1	10	N12PF21	2.12	2
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	11	BCHPF2-212	2.35	1.97
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	12	UstdPF2-212	2.77	1.37
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	13	N06PF21	2.96	2.48
SRNL-SCS-2008-00003	2	SB5	SB5-05	2	1	14	N07PF21	1.97	1.99
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	2	1	15	N05PF21	2.57	2.2
SRNL-SCS-2008-00003	2	SB5	SB5-01	2	1	16	N02PF21	1.9	1.96
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	1	17	N08PF11	2.05	2
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	1	18	N06PF11	2.91	2.5
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	1	19	N01PF11	2.16	1.97
SRNL-SCS-2008-00003	2	SB5	SB5-07	2	1	20	N15PF11	2.68	1.71
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	1	21	BCHPF2-213	2.37	1.99
SRNL-SCS-2008-00003	2	Ustd	U std	2	1	22	UstdPF2-213	2.72	1.36
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	1	BCHPF2-221	2.5	1.98
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	2	UstdPF2-221	2.83	1.38
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	3	N01PF12	2.27	2.01
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	2	2	4	N05PF22	2.66	2.23
SRNL-SCS-2008-00003	2	SB5	SB5-01	2	2	5	N02PF22	1.93	1.95

**Table A3. Measured Elemental Concentrations (wt%) for Samples
in SRNL-SCS-2008-00003 Prepared Using Peroxide Fusion. (continued)**

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	B	Li
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	6	N08PF22	2.19	2.02
SRNL-SCS-2008-00003	2	SB5	SB5-05	2	2	7	N07PF22	2	2.02
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	8	N06PF22	3.03	2.48
SRNL-SCS-2008-00003	2	SB5	SB5-07	2	2	9	N15PF12	2.78	1.73
SRNL-SCS-2008-00003	2	SB4	SB4VAR33	2	2	10	N05PF12	2.64	2.23
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	11	BCHPF2-222	2.43	1.98
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	12	UstdPF2-222	2.79	1.38
SRNL-SCS-2008-00003	2	SB5	SB5-05	2	2	13	N07PF12	2.09	2.04
SRNL-SCS-2008-00003	2	SB5	SB5-01	2	2	14	N02PF12	1.99	1.98
SRNL-SCS-2008-00003	2	SB5	SB5-06	2	2	15	N01PF22	2.18	2.01
SRNL-SCS-2008-00003	2	SB5	SB5-10	2	2	16	N08PF12	2.14	2.03
SRNL-SCS-2008-00003	2	SB5	SB5-02	2	2	17	N12PF22	2.18	2.03
SRNL-SCS-2008-00003	2	SB5	SB5-07	2	2	18	N15PF22	2.65	1.72
SRNL-SCS-2008-00003	2	SB5	SB5-02	2	2	19	N12PF12	2.26	2.06
SRNL-SCS-2008-00003	2	SB4	SB4VAR31	2	2	20	N06PF12	3.08	2.58
SRNL-SCS-2008-00003	2	Batch 1	Batch 1	2	2	21	BCHPF2-223	2.52	2.02
SRNL-SCS-2008-00003	2	Ustd	U std	2	2	22	UstdPF2-223	2.88	1.4
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	1	BCHPF3-111	2.57	2.01
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	2	UstdPF3-111	2.8	1.37
SRNL-SCS-2008-00003	3	SB5	SB5-19	1	1	3	P04PF21	2.88	1.39
SRNL-SCS-2008-00003	3	SB5	SB5-17	1	1	4	P02PF21	2.98	2.58
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	5	P10PF21	3.8	2.39
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	6	P14PF11	2.08	2.03
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	1	7	P14PF21	2.08	2.03
SRNL-SCS-2008-00003	3	SB5	SB5-19	1	1	8	P04PF11	2.96	1.45
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	9	P09PF21	2.73	1.99
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	10	BCHPF3-112	2.46	1.99
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	11	UstdPF3-112	2.88	1.38
SRNL-SCS-2008-00003	3	SB5	SB5-17	1	1	12	P02PF11	3.04	2.56
SRNL-SCS-2008-00003	3	HWL	HWL-27	1	1	13	P13PF11	1.84	2.54
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	14	P05PF21	3.66	1.89
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	1	15	P09PF11	2.74	1.99
SRNL-SCS-2008-00003	3	HWL	HWL-27	1	1	16	P13PF21	1.67	2.45
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	1	17	P10PF11	3.71	2.39
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	1	18	P05PF11	4.06	1.93
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	1	19	BCHPF3-113	2.63	2.02
SRNL-SCS-2008-00003	3	Ustd	U std	1	1	20	UstdPF3-113	3	1.42
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	1	BCHPF3-121	2.52	2.01
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	2	UstdPF3-121	2.87	1.41
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	3	P09PF12	2.79	2.04
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	4	P10PF12	3.56	2.39
SRNL-SCS-2008-00003	3	SB5	SB5-17	1	2	5	P02PF12	2.86	2.53
SRNL-SCS-2008-00003	3	SB5	SB5-19	1	2	6	P04PF12	2.85	1.45
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	7	P05PF22	3.62	1.89
SRNL-SCS-2008-00003	3	HWL	HWL-27	1	2	8	P13PF12	1.71	2.51
SRNL-SCS-2008-00003	3	SB5	SB5-17	1	2	9	P02PF22	2.95	2.6
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	10	BCHPF3-122	2.43	2.03
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	11	UstdPF3-122	2.75	1.39
SRNL-SCS-2008-00003	3	HWL	HWL-25	1	2	12	P05PF12	3.77	1.88
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	13	P14PF22	1.95	2
SRNL-SCS-2008-00003	3	SB5	SB5-13	1	2	14	P14PF12	1.98	2.03
SRNL-SCS-2008-00003	3	SB5	SB5-19	1	2	15	P04PF22	2.8	1.41
SRNL-SCS-2008-00003	3	HWL	HWL-27	1	2	16	P13PF22	1.67	2.51
SRNL-SCS-2008-00003	3	HWL	HWL-23	1	2	17	P10PF22	3.5	2.36
SRNL-SCS-2008-00003	3	SB5	SB5-18	1	2	18	P09PF22	2.62	1.99
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	1	2	19	BCHPF3-123	2.28	1.98
SRNL-SCS-2008-00003	3	Ustd	U std	1	2	20	UstdPF3-123	2.7	1.38
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	1	BCHPF3-211	2.36	1.95
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	2	UstdPF3-211	2.81	1.38
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	3	P07PF21	1.72	2.46
SRNL-SCS-2008-00003	3	SB5	SB5-14	2	1	4	P08PF11	2.14	2.05
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	5	P03PF21	3.58	1.82
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	1	6	P07PF11	1.68	2.4
SRNL-SCS-2008-00003	3	SB5	SB5-20	2	1	7	P01PF11	2.95	1.12
SRNL-SCS-2008-00003	3	SB5	SB5-20	2	1	8	P01PF21	3.1	1.18
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	9	P06PF11	2.95	1.39
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	10	BCHPF3-212	2.4	2.01

**Table A3. Measured Elemental Concentrations (wt%) for Samples
in SRNL-SCS-2008-00003 Prepared Using Peroxide Fusion. (continued)**

Analytical Plan	Set	Type	Glass ID	Block	Sub-Block	Sequence	Lab ID	B	Li
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	11	UstdPF3-212	2.86	1.39
SRNL-SCS-2008-00003	3	SB5	SB5-14	2	1	12	P08PF21	2.13	2
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	13	P12PF21	2.59	1.68
SRNL-SCS-2008-00003	3	HWL	HWL-28	2	1	14	P11PF11	1.68	2.38
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	1	15	P12PF11	2.6	1.69
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	1	16	P06PF21	3.11	1.44
SRNL-SCS-2008-00003	3	HWL	HWL-28	2	1	17	P11PF21	1.66	2.38
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	1	18	P03PF11	3.64	1.82
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	1	19	BCHPF3-213	2.43	2.02
SRNL-SCS-2008-00003	3	Ustd	U std	2	1	20	UstdPF3-213	2.82	1.4
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	1	BCHPF3-221	2.46	2.02
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	2	UstdPF3-221	2.76	1.38
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	3	P03PF22	3.6	1.83
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	4	P06PF12	2.96	1.4
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	5	P12PF22	2.58	1.67
SRNL-SCS-2008-00003	3	SB5	SB5-14	2	2	6	P08PF12	2.1	2.04
SRNL-SCS-2008-00003	3	SB5	SB5-20	2	2	7	P01PF12	3.06	1.18
SRNL-SCS-2008-00003	3	HWL	HWL-28	2	2	8	P11PF22	1.67	2.4
SRNL-SCS-2008-00003	3	SB5	SB5-14	2	2	9	P08PF22	2.11	2.01
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	10	BCHPF3-222	2.34	1.99
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	11	UstdPF3-222	2.65	1.38
SRNL-SCS-2008-00003	3	HWL	HWL-28	2	2	12	P11PF12	1.67	2.41
SRNL-SCS-2008-00003	3	HWL	HWL-26	2	2	13	P03PF12	3.44	1.76
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	14	P07PF12	1.61	2.4
SRNL-SCS-2008-00003	3	SB5	SB5-16	2	2	15	P06PF22	2.92	1.43
SRNL-SCS-2008-00003	3	HWL	HWL-24	2	2	16	P07PF22	1.57	2.42
SRNL-SCS-2008-00003	3	SB5	SB5-15	2	2	17	P12PF12	2.65	1.7
SRNL-SCS-2008-00003	3	SB5	SB5-20	2	2	18	P01PF22	2.92	1.17
SRNL-SCS-2008-00003	3	Batch 1	Batch 1	2	2	19	BCHPF3-223	2.23	1.95
SRNL-SCS-2008-00003	3	Ustd	U std	2	2	20	UstdPF3-223	2.67	1.38

Table A4. Measured Elemental Concentrations (wt%) for Samples in SRNL-SCS-2008-00043 Prepared Using Lithium Metaborate. (Part 1)

Analytical Plan	Glass ID	Block	Sequence	Lab ID	Ag	Al	Ba	Ca	Ce	Cr	Fe	Hf	K	La	Mg
SRNL-SCS-2008-00043	Batch 1	1	1	BCHLM11	<0.100	2.48	0.12	0.902	<0.010	0.075	8.76	<0.010	2.62	<0.010	0.84
SRNL-SCS-2008-00043	SB5-21	1	2	V06LM21	<0.100	6.1	0.027	1.45	0.142	0.087	6.05	<0.010	<0.100	0.053	0.286
SRNL-SCS-2008-00043	SB5-26	1	3	V05LM11	<0.100	4.67	0.037	0.627	0.158	0.103	7.77	<0.010	<0.100	0.068	0.386
SRNL-SCS-2008-00043	SB5-21	1	4	V06LM11	<0.100	5.99	0.029	1.4	0.15	0.094	6.47	<0.010	<0.100	0.056	0.297
SRNL-SCS-2008-00043	SB5-25	1	5	V03LM11	<0.100	5.53	0.034	1.46	0.135	0.096	7.35	<0.010	<0.100	0.061	0.335
SRNL-SCS-2008-00043	SB5-24	1	6	V01LM11	<0.100	6.02	0.032	0.494	0.12	0.088	6.03	2.08	<0.100	0.054	0.298
SRNL-SCS-2008-00043	SB5-26	1	7	V05LM21	<0.100	4.69	0.039	0.629	0.151	0.103	7.78	<0.010	<0.100	0.07	0.382
SRNL-SCS-2008-00043	Batch 1	1	8	BCHLM12	<0.100	2.53	0.127	0.901	<0.010	0.078	9.22	<0.010	2.6	<0.010	0.837
SRNL-SCS-2008-00043	SB5-25	1	9	V03LM21	<0.100	5.5	0.037	1.49	0.138	0.105	7.42	<0.010	<0.100	0.063	0.354
SRNL-SCS-2008-00043	SB5-22	1	10	V02LM11	<0.100	5.14	0.032	0.573	0.157	0.092	6.85	<0.010	<0.100	0.057	0.31
SRNL-SCS-2008-00043	SB5-23	1	11	V04LM11	<0.100	4.34	0.036	1.48	0.138	0.096	7.47	2.58	<0.100	0.062	0.34
SRNL-SCS-2008-00043	SB5-24	1	12	V01LM21	<0.100	6.11	0.03	0.507	0.118	0.083	6.11	2.13	<0.100	0.051	0.279
SRNL-SCS-2008-00043	SB5-22	1	13	V02LM21	<0.100	5.03	0.029	0.574	0.15	0.09	6.8	<0.010	<0.100	0.058	0.311
SRNL-SCS-2008-00043	SB5-23	1	14	V04LM21	<0.100	4.22	0.036	1.44	0.134	0.094	7.24	2.51	<0.100	0.06	0.338
SRNL-SCS-2008-00043	Batch 1	1	15	BCHLM13	<0.100	2.53	0.126	0.895	<0.010	0.077	9.28	<0.010	2.56	<0.010	0.827
SRNL-SCS-2008-00043	Batch 1	2	1	BCHLM21	<0.100	2.52	0.118	0.896	<0.010	0.072	8.73	<0.010	2.61	<0.010	0.8
SRNL-SCS-2008-00043	SB5-24	2	2	V01LM12	<0.100	5.96	0.03	0.495	0.118	0.082	5.7	2	<0.100	0.05	0.286
SRNL-SCS-2008-00043	SB5-23	2	3	V04LM22	<0.100	4.18	0.033	1.46	0.13	0.085	6.72	2.4	<0.100	0.056	0.314
SRNL-SCS-2008-00043	SB5-25	2	4	V03LM22	<0.100	5.53	0.033	1.49	0.133	0.095	6.96	<0.010	<0.100	0.058	0.328
SRNL-SCS-2008-00043	SB5-21	2	5	V06LM12	<0.100	5.94	0.027	1.42	0.147	0.088	6.05	<0.010	<0.100	0.054	0.291
SRNL-SCS-2008-00043	SB5-22	2	6	V02LM12	<0.100	5.04	0.029	0.582	0.15	0.083	6.4	<0.010	<0.100	0.052	0.281
SRNL-SCS-2008-00043	SB5-25	2	7	V03LM12	<0.100	5.4	0.032	1.48	0.132	0.09	6.92	<0.010	<0.100	0.057	0.32
SRNL-SCS-2008-00043	Batch 1	2	8	BCHLM22	<0.100	2.48	0.118	0.902	<0.010	0.073	8.61	<0.010	2.63	<0.010	0.809
SRNL-SCS-2008-00043	SB5-24	2	9	V01LM22	<0.100	5.98	0.029	0.508	0.116	0.078	5.62	1.99	<0.100	0.049	0.275
SRNL-SCS-2008-00043	SB5-21	2	10	V06LM22	<0.100	5.97	0.026	1.43	0.139	0.082	5.89	<0.010	<0.100	0.05	0.27
SRNL-SCS-2008-00043	SB5-22	2	11	V02LM22	<0.100	5.05	0.032	0.581	0.151	0.084	6.45	<0.010	<0.100	0.057	0.289
SRNL-SCS-2008-00043	SB5-26	2	12	V05LM12	<0.100	4.67	0.035	0.629	0.153	0.099	7.27	<0.010	<0.100	0.065	0.363
SRNL-SCS-2008-00043	SB5-23	2	13	V04LM12	<0.100	4.28	0.033	1.52	0.133	0.09	6.85	2.45	<0.100	0.057	0.32
SRNL-SCS-2008-00043	SB5-26	2	14	V05LM22	<0.100	4.68	0.036	0.626	0.147	0.094	7.23	<0.010	<0.100	0.064	0.362
SRNL-SCS-2008-00043	Batch 1	2	15	BCHLM23	<0.100	2.5	0.116	0.909	<0.010	0.071	8.5	<0.010	2.65	<0.010	0.775

Table A4. Measured Elemental Concentrations (wt%) for Samples in SRNL-SCS-2008-00043 Prepared Using Lithium Metaborate. (Part 2)

Analytical Plan	Glass ID	Block	Sequence	Lab ID	Mn (wt%)	Na (wt%)	Nd (wt%)	Ni (wt%)	Pb (wt%)	S (wt%)	Si (wt%)	Ti (wt%)	Zn (wt%)	Zr (wt%)
SRNL-SCS-2008-00043	Batch 1	1	1	BCHLM11	1.33	6.54	0.104	0.45	<0.020	<0.050	23.6	0.374	<0.010	0.062
SRNL-SCS-2008-00043	SB5-21	1	2	V06LM21	1.47	10.3	2.41	0.72	<0.020	0.085	21.2	<0.010	<0.010	0.068
SRNL-SCS-2008-00043	SB5-26	1	3	V05LM11	1.97	11	<0.100	0.96	<0.020	0.112	21.6	<0.010	<0.010	0.09
SRNL-SCS-2008-00043	SB5-21	1	4	V06LM11	1.54	10.2	2.43	0.804	<0.020	0.099	21.6	<0.010	<0.010	0.072
SRNL-SCS-2008-00043	SB5-25	1	5	V03LM11	1.8	10.2	<0.100	0.836	<0.020	0.106	21.3	<0.010	<0.010	0.077
SRNL-SCS-2008-00043	SB5-24	1	6	V01LM11	1.54	10.6	<0.100	0.743	<0.020	0.068	21.6	<0.010	<0.010	0.063
SRNL-SCS-2008-00043	SB5-26	1	7	V05LM21	1.97	11	<0.100	0.944	<0.020	0.108	21.7	<0.010	<0.010	0.089
SRNL-SCS-2008-00043	Batch 1	1	8	BCHLM12	1.39	6.67	0.105	0.463	<0.020	<0.050	24.2	0.381	<0.010	0.064
SRNL-SCS-2008-00043	SB5-25	1	9	V03LM21	1.84	10.6	<0.100	0.852	<0.020	0.108	21.8	<0.010	<0.010	0.086
SRNL-SCS-2008-00043	SB5-22	1	10	V02LM11	1.68	10.5	2.66	0.743	<0.020	0.091	21.8	<0.010	<0.010	0.069
SRNL-SCS-2008-00043	SB5-23	1	11	V04LM11	1.83	10.3	<0.100	0.842	<0.020	0.105	21.9	<0.010	<0.010	0.092
SRNL-SCS-2008-00043	SB5-24	1	12	V01LM21	1.56	10.8	<0.100	0.701	<0.020	0.073	22	<0.010	<0.010	0.062
SRNL-SCS-2008-00043	SB5-22	1	13	V02LM21	1.69	10.4	2.67	0.745	<0.020	0.1	21.9	<0.010	<0.010	0.064
SRNL-SCS-2008-00043	SB5-23	1	14	V04LM21	1.77	9.73	<0.100	0.816	<0.020	0.105	21.2	<0.010	<0.010	0.082
SRNL-SCS-2008-00043	Batch 1	1	15	BCHLM13	1.4	6.58	0.105	0.465	<0.020	<0.050	24.4	0.373	<0.010	0.064
SRNL-SCS-2008-00043	Batch 1	2	1	BCHLM21	1.33	7.7	0.104	0.449	<0.020	<0.050	23.6	0.363	<0.010	0.06
SRNL-SCS-2008-00043	SB5-24	2	2	V01LM12	1.46	10.7	<0.100	0.722	<0.020	0.079	20.9	<0.010	<0.010	0.06
SRNL-SCS-2008-00043	SB5-23	2	3	V04LM22	1.66	9.87	<0.100	0.785	<0.020	0.095	20.4	<0.010	<0.010	0.078
SRNL-SCS-2008-00043	SB5-25	2	4	V03LM22	1.73	10.4	<0.100	0.821	<0.020	0.115	21	<0.010	<0.010	0.082
SRNL-SCS-2008-00043	SB5-21	2	5	V06LM12	1.44	10.2	2.38	0.792	<0.020	0.107	20.8	<0.010	<0.010	0.069
SRNL-SCS-2008-00043	SB5-22	2	6	V02LM12	1.58	10.4	2.63	0.701	<0.020	0.1	21	<0.010	<0.010	0.064
SRNL-SCS-2008-00043	SB5-25	2	7	V03LM12	1.71	10.3	<0.100	0.821	<0.020	0.098	20.7	<0.010	<0.010	0.074
SRNL-SCS-2008-00043	Batch 1	2	8	BCHLM22	1.31	6.62	0.102	0.446	<0.020	<0.050	23.3	0.369	<0.010	0.06
SRNL-SCS-2008-00043	SB5-24	2	9	V01LM22	1.45	10.7	<0.100	0.692	<0.020	0.081	20.9	<0.010	<0.010	0.059
SRNL-SCS-2008-00043	SB5-21	2	10	V06LM22	1.44	10.2	2.39	0.707	<0.020	0.088	20.8	<0.010	<0.010	0.065
SRNL-SCS-2008-00043	SB5-22	2	11	V02LM22	1.59	10.5	2.64	0.702	<0.020	0.101	21.8	<0.010	<0.010	0.069
SRNL-SCS-2008-00043	SB5-26	2	12	V05LM12	1.85	11.2	<0.100	0.939	<0.020	0.107	20.9	<0.010	<0.010	0.085
SRNL-SCS-2008-00043	SB5-23	2	13	V04LM12	1.69	10.2	<0.100	0.81	<0.020	0.098	20.9	<0.010	<0.010	0.088
SRNL-SCS-2008-00043	SB5-26	2	14	V05LM22	1.84	11.1	<0.100	0.912	<0.020	0.11	20.8	<0.010	<0.010	0.085
SRNL-SCS-2008-00043	Batch 1	2	15	BCHLM23	1.3	6.67	0.103	0.442	<0.020	<0.050	23.2	0.361	<0.010	0.06

Table A5. Measured Elemental Concentrations (wt%) for Samples in SRNL-SCS-2008-00043 Prepared Using Peroxide Fusion.

Analytical Plan	Glass ID	Block	Sequence	Lab ID	B	Li
SRNL-SCS-2008-00043	Batch 1	1	1	BCHPF11	2.54	2.04
SRNL-SCS-2008-00043	SB5-24	1	2	V01PF11	3.14	1.43
SRNL-SCS-2008-00043	SB5-26	1	3	V05PF21	3.17	1.44
SRNL-SCS-2008-00043	SB5-22	1	4	V02PF21	3.12	1.43
SRNL-SCS-2008-00043	SB5-26	1	5	V05PF11	3.15	1.44
SRNL-SCS-2008-00043	SB5-21	1	6	V06PF11	2.79	1.73
SRNL-SCS-2008-00043	SB5-22	1	7	V02PF11	3.11	1.41
SRNL-SCS-2008-00043	Batch 1	1	8	BCHPF12	2.44	2.04
SRNL-SCS-2008-00043	SB5-24	1	9	V01PF21	3.17	1.43
SRNL-SCS-2008-00043	SB5-25	1	10	V03PF11	2.74	1.66
SRNL-SCS-2008-00043	SB5-23	1	11	V04PF11	2.7	1.72
SRNL-SCS-2008-00043	SB5-23	1	12	V04PF21	2.77	1.74
SRNL-SCS-2008-00043	SB5-25	1	13	V03PF21	2.78	1.69
SRNL-SCS-2008-00043	SB5-21	1	14	V06PF21	2.76	1.7
SRNL-SCS-2008-00043	Batch 1	1	15	BCHPF13	2.4	2.03
SRNL-SCS-2008-00043	Batch 1	2	1	BCHPF21	2.46	2.05
SRNL-SCS-2008-00043	SB5-25	2	2	V03PF22	2.73	1.69
SRNL-SCS-2008-00043	SB5-23	2	3	V04PF22	2.72	1.74
SRNL-SCS-2008-00043	SB5-24	2	4	V01PF12	3.02	1.43
SRNL-SCS-2008-00043	SB5-21	2	5	V06PF22	2.76	1.71
SRNL-SCS-2008-00043	SB5-22	2	6	V02PF12	3.14	1.43
SRNL-SCS-2008-00043	SB5-26	2	7	V05PF22	3.21	1.48
SRNL-SCS-2008-00043	Batch 1	2	8	BCHPF22	2.46	2.07
SRNL-SCS-2008-00043	SB5-26	2	9	V05PF12	3.17	1.46
SRNL-SCS-2008-00043	SB5-22	2	10	V02PF22	3.07	1.44
SRNL-SCS-2008-00043	SB5-23	2	11	V04PF12	2.7	1.71
SRNL-SCS-2008-00043	SB5-25	2	12	V03PF12	2.78	1.7
SRNL-SCS-2008-00043	SB5-24	2	13	V01PF22	3.27	1.48
SRNL-SCS-2008-00043	SB5-21	2	14	V06PF12	2.85	1.77
SRNL-SCS-2008-00043	Batch 1	2	15	BCHPF23	2.45	2.08

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass.

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 2	Batch 1	Al2O3 (wt%)	4.7820	4.8770	4.8770	-0.0950	0.0000	-1.9%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	B2O3 (wt%)	7.8056	7.7770	7.7770	0.0286	0.0000	0.4%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	BaO (wt%)	0.1421	0.1510	0.1510	-0.0089	0.0000	-5.9%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	CaO (wt%)	1.1885	1.2200	1.2200	-0.0315	0.0000	-2.6%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 2	Batch 1	Ce2O3 (wt%)	0.0130	0.0130	0.0000	0.0130	0.0130		
SRNL-SCS-2008-00003/Set 2	Batch 1	Cr2O3 (wt%)	0.1077	0.1070	0.1070	0.0007	0.0000	0.6%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	CuO (wt%)	0.3781	0.3990	0.3990	-0.0209	0.0000	-5.2%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	Fe2O3 (wt%)	13.0341	12.8390	12.8390	0.1951	0.0000	1.5%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	K2O (wt%)	3.0406	3.3270	3.3270	-0.2864	0.0000	-8.6%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	La2O3 (wt%)	0.0586	0.0586	0.0000	0.0586	0.0586		
SRNL-SCS-2008-00003/Set 2	Batch 1	Li2O (wt%)	4.2412	4.4290	4.4290	-0.1878	0.0000	-4.2%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	MgO (wt%)	1.3794	1.4190	1.4190	-0.0396	0.0000	-2.8%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	MnO (wt%)	1.7700	1.7260	1.7260	0.0440	0.0000	2.6%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	Na2O (wt%)	8.9979	9.0030	9.0030	-0.0051	0.0000	-0.1%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	Nb2O5 (wt%)	0.0416	0.0416	0.0000	0.0416	0.0416		
SRNL-SCS-2008-00003/Set 2	Batch 1	NiO (wt%)	0.7085	0.7510	0.7510	-0.0425	0.0000	-5.7%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	PbO (wt%)	0.0108	0.0108	0.0000	0.0108	0.0108		
SRNL-SCS-2008-00003/Set 2	Batch 1	SiO2 (wt%)	51.0401	50.2200	50.2200	0.8201	0.0000	1.6%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	SO4 (wt%)	0.1498	0.1498	0.0000	0.1498	0.1498		
SRNL-SCS-2008-00003/Set 2	Batch 1	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	Batch 1	TiO2 (wt%)	0.6543	0.6770	0.6770	-0.0227	0.0000	-3.4%	0.0%
SRNL-SCS-2008-00003/Set 2	Batch 1	U3O8 (wt%)	0.0590	0.0607	0.0000	0.0590	0.0607		
SRNL-SCS-2008-00003/Set 2	Batch 1	ZnO (wt%)	0.0062	0.0062	0.0000	0.0062	0.0062		
SRNL-SCS-2008-00003/Set 2	Batch 1	ZrO2 (wt%)	0.0857	0.0857	0.0980	-0.0123	-0.0123	-12.6%	-12.6%
SRNL-SCS-2008-00003/Set 2	Batch 1	Sum	99.7574	99.4110	99.0200	0.7374	0.3910	0.7%	0.4%
SRNL-SCS-2008-00003/Set 2	SB5-01	Al2O3 (wt%)	11.0489	11.4685	11.0090	0.0399	0.4595	0.4%	4.2%
SRNL-SCS-2008-00003/Set 2	SB5-01	B2O3 (wt%)	6.2064	6.1308	6.2000	0.0064	-0.0692	0.1%	-1.1%
SRNL-SCS-2008-00003/Set 2	SB5-01	BaO (wt%)	0.0341	0.0367	0.0390	-0.0049	-0.0023	-12.7%	-5.9%
SRNL-SCS-2008-00003/Set 2	SB5-01	CaO (wt%)	3.4001	3.5382	3.1570	0.2431	0.3812	7.7%	12.1%
SRNL-SCS-2008-00003/Set 2	SB5-01	CdO (wt%)	0.0146	0.0146	0.0230	-0.0084	-0.0084	-36.7%	-36.7%
SRNL-SCS-2008-00003/Set 2	SB5-01	Ce2O3 (wt%)	0.0990	0.0990	0.1410	-0.0420	-0.0420	-29.8%	-29.8%
SRNL-SCS-2008-00003/Set 2	SB5-01	Cr2O3 (wt%)	0.1118	0.1124	0.1420	-0.0302	-0.0296	-21.3%	-20.9%
SRNL-SCS-2008-00003/Set 2	SB5-01	CuO (wt%)	0.0063	0.0067	0.0050	0.0013	0.0017	25.2%	34.0%
SRNL-SCS-2008-00003/Set 2	SB5-01	Fe2O3 (wt%)	8.6676	8.4919	8.8340	-0.1664	-0.3421	-1.9%	-3.9%
SRNL-SCS-2008-00003/Set 2	SB5-01	K2O (wt%)	0.0157	0.0174	0.0250	-0.0093	-0.0076	-37.4%	-30.4%
SRNL-SCS-2008-00003/Set 2	SB5-01	La2O3 (wt%)	0.0586	0.0586	0.0620	-0.0034	-0.0034	-5.4%	-5.4%
SRNL-SCS-2008-00003/Set 2	SB5-01	Li2O (wt%)	4.2251	4.3752	4.3400	-0.1149	0.0352	-2.6%	0.8%
SRNL-SCS-2008-00003/Set 2	SB5-01	MgO (wt%)	0.4386	0.4552	0.4470	-0.0084	0.0082	-1.9%	1.8%
SRNL-SCS-2008-00003/Set 2	SB5-01	MnO (wt%)	1.8852	1.8187	1.8470	0.0382	-0.0283	2.1%	-1.5%
SRNL-SCS-2008-00003/Set 2	SB5-01	Na2O (wt%)	13.5541	13.8242	13.7760	-0.2219	0.0482	-1.6%	0.3%
SRNL-SCS-2008-00003/Set 2	SB5-01	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-01	NiO (wt%)	0.9102	0.9743	1.0370	-0.1268	-0.0627	-12.2%	-6.0%
SRNL-SCS-2008-00003/Set 2	SB5-01	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00003/Set 2	SB5-01	SiO2 (wt%)	45.5136	44.9843	45.3570	0.1566	-0.3727	0.3%	-0.8%
SRNL-SCS-2008-00003/Set 2	SB5-01	SO4 (wt%)	0.1498	0.1498	0.2770	-0.1272	-0.1272	-45.9%	-45.9%
SRNL-SCS-2008-00003/Set 2	SB5-01	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-01	TiO2 (wt%)	0.0083	0.0088	0.0100	-0.0017	-0.0012	-16.6%	-12.5%
SRNL-SCS-2008-00003/Set 2	SB5-01	U3O8 (wt%)	2.7210	2.8546	2.8260	-0.1050	0.0286	-3.7%	1.0%
SRNL-SCS-2008-00003/Set 2	SB5-01	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-01	ZrO2 (wt%)	0.0848	0.0848	0.0980	-0.0132	-0.0132	-13.5%	-13.5%
SRNL-SCS-2008-00003/Set 2	SB5-01	Sum	99.2345	99.5854	99.6660	-0.4315	-0.0806	-0.4%	-0.1%
SRNL-SCS-2008-00003/Set 2	SB5-02	Al2O3 (wt%)	10.8032	11.2135	11.0090	-0.2058	0.2045	-1.9%	1.9%
SRNL-SCS-2008-00003/Set 2	SB5-02	B2O3 (wt%)	7.0113	6.9257	6.8200	0.1913	0.1057	2.8%	1.6%
SRNL-SCS-2008-00003/Set 2	SB5-02	BaO (wt%)	0.0352	0.0379	0.0390	-0.0038	-0.0011	-9.8%	-2.8%
SRNL-SCS-2008-00003/Set 2	SB5-02	CaO (wt%)	1.9764	2.0566	1.9170	0.0594	0.1396	3.1%	7.3%
SRNL-SCS-2008-00003/Set 2	SB5-02	CdO (wt%)	0.0148	0.0148	0.0230	-0.0082	-0.0082	-35.4%	-35.4%
SRNL-SCS-2008-00003/Set 2	SB5-02	Ce2O3 (wt%)	0.0972	0.0972	0.1410	-0.0438	-0.0438	-31.1%	-31.1%
SRNL-SCS-2008-00003/Set 2	SB5-02	Cr2O3 (wt%)	0.1195	0.1201	0.1420	-0.0225	-0.0219	-15.9%	-15.4%
SRNL-SCS-2008-00003/Set 2	SB5-02	CuO (wt%)	0.0063	0.0067	0.0050	0.0013	0.0017	25.2%	34.0%
SRNL-SCS-2008-00003/Set 2	SB5-02	Fe2O3 (wt%)	8.3673	8.2004	8.8340	-0.4667	-0.6336	-5.3%	-7.2%
SRNL-SCS-2008-00003/Set 2	SB5-02	K2O (wt%)	0.0139	0.0154	0.0250	-0.0111	-0.0096	-44.6%	-38.5%
SRNL-SCS-2008-00003/Set 2	SB5-02	La2O3 (wt%)	0.0586	0.0586	0.0620	-0.0034	-0.0034	-5.4%	-5.4%
SRNL-SCS-2008-00003/Set 2	SB5-02	Li2O (wt%)	4.3596	4.5144	4.3400	0.0196	0.1744	0.5%	4.0%
SRNL-SCS-2008-00003/Set 2	SB5-02	MgO (wt%)	0.4527	0.4698	0.4470	0.0057	0.0228	1.3%	5.1%
SRNL-SCS-2008-00003/Set 2	SB5-02	MnO (wt%)	1.8400	1.7759	1.8470	-0.0070	-0.0711	-0.4%	-3.9%
SRNL-SCS-2008-00003/Set 2	SB5-02	Na2O (wt%)	13.2643	13.5285	13.7760	-0.5117	-0.2475	-3.7%	-1.8%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 2	SB5-02	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-02	NiO (wt%)	0.9305	0.9961	1.0370	-0.1065	-0.0409	-10.3%	-3.9%
SRNL-SCS-2008-00003/Set 2	SB5-02	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00003/Set 2	SB5-02	SiO2 (wt%)	45.2462	44.7218	45.9770	-0.7308	-1.2552	-1.6%	-2.7%
SRNL-SCS-2008-00003/Set 2	SB5-02	SO4 (wt%)	0.1498	0.1498	0.2770	-0.1272	-0.1272	-45.9%	-45.9%
SRNL-SCS-2008-00003/Set 2	SB5-02	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-02	TiO2 (wt%)	0.0133	0.0140	0.0100	0.0033	0.0040	33.4%	40.0%
SRNL-SCS-2008-00003/Set 2	SB5-02	U3O8 (wt%)	2.6738	2.8050	2.8260	-0.1522	-0.0210	-5.4%	-0.7%
SRNL-SCS-2008-00003/Set 2	SB5-02	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-02	ZrO2 (wt%)	0.0895	0.0895	0.0980	-0.0085	-0.0085	-8.7%	-8.7%
SRNL-SCS-2008-00003/Set 2	SB5-02	Sum	97.6046	97.8929	99.6660	-2.0614	-1.7731	-2.1%	-1.8%
SRNL-SCS-2008-00003/Set 2	SB5-03	Al2O3 (wt%)	11.1528	11.1786	11.0090	0.1438	0.1696	1.3%	1.5%
SRNL-SCS-2008-00003/Set 2	SB5-03	B2O3 (wt%)	8.5086	8.5509	8.6800	-0.1714	-0.1291	-2.0%	-1.5%
SRNL-SCS-2008-00003/Set 2	SB5-03	BaO (wt%)	0.0371	0.0389	0.0390	-0.0019	-0.0001	-4.8%	-0.2%
SRNL-SCS-2008-00003/Set 2	SB5-03	CaO (wt%)	2.0393	2.0672	1.9170	0.1223	0.1502	6.4%	7.8%
SRNL-SCS-2008-00003/Set 2	SB5-03	CdO (wt%)	0.0151	0.0151	0.0230	-0.0079	-0.0079	-34.2%	-34.2%
SRNL-SCS-2008-00003/Set 2	SB5-03	Ce2O3 (wt%)	0.1040	0.1040	0.1410	-0.0370	-0.0370	-26.3%	-26.3%
SRNL-SCS-2008-00003/Set 2	SB5-03	Cr2O3 (wt%)	0.1199	0.1178	0.1420	-0.0221	-0.0242	-15.6%	-17.1%
SRNL-SCS-2008-00003/Set 2	SB5-03	CuO (wt%)	0.0110	0.0113	0.0050	0.0060	0.0063	119.1%	126.8%
SRNL-SCS-2008-00003/Set 2	SB5-03	Fe2O3 (wt%)	8.5282	8.4402	8.8340	-0.3058	-0.3938	-3.5%	-4.5%
SRNL-SCS-2008-00003/Set 2	SB5-03	K2O (wt%)	0.0099	0.0107	0.0250	-0.0151	-0.0143	-60.2%	-57.2%
SRNL-SCS-2008-00003/Set 2	SB5-03	La2O3 (wt%)	0.0586	0.0586	0.0620	-0.0034	-0.0034	-5.4%	-5.4%
SRNL-SCS-2008-00003/Set 2	SB5-03	Li2O (wt%)	3.5630	3.7525	3.7200	-0.1570	0.0325	-4.2%	0.9%
SRNL-SCS-2008-00003/Set 2	SB5-03	MgO (wt%)	0.4681	0.4772	0.4470	0.0211	0.0302	4.7%	6.8%
SRNL-SCS-2008-00003/Set 2	SB5-03	MnO (wt%)	1.8690	1.8408	1.8470	0.0220	-0.0062	1.2%	-0.3%
SRNL-SCS-2008-00003/Set 2	SB5-03	Na2O (wt%)	13.7934	13.5425	13.7760	0.0174	-0.2335	0.1%	-1.7%
SRNL-SCS-2008-00003/Set 2	SB5-03	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-03	NiO (wt%)	0.9614	1.0092	1.0370	-0.0756	-0.0278	-7.3%	-2.7%
SRNL-SCS-2008-00003/Set 2	SB5-03	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00003/Set 2	SB5-03	SiO2 (wt%)	45.1392	44.2131	44.7370	0.4022	-0.5239	0.9%	-1.2%
SRNL-SCS-2008-00003/Set 2	SB5-03	SO4 (wt%)	0.1498	0.1498	0.2770	-0.1272	-0.1272	-45.9%	-45.9%
SRNL-SCS-2008-00003/Set 2	SB5-03	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-03	TiO2 (wt%)	0.0129	0.0132	0.0100	0.0029	0.0032	29.3%	32.1%
SRNL-SCS-2008-00003/Set 2	SB5-03	U3O8 (wt%)	2.8035	2.8328	2.8260	-0.0225	0.0068	-0.8%	0.2%
SRNL-SCS-2008-00003/Set 2	SB5-03	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-03	ZrO2 (wt%)	0.0942	0.0942	0.0980	-0.0038	-0.0038	-3.9%	-3.9%
SRNL-SCS-2008-00003/Set 2	SB5-03	Sum	99.5201	98.5997	99.6660	-0.1459	-1.0663	-0.1%	-1.1%
SRNL-SCS-2008-00003/Set 2	SB5-04	Al2O3 (wt%)	11.0441	11.4636	11.0090	0.0351	0.4546	0.3%	4.1%
SRNL-SCS-2008-00003/Set 2	SB5-04	B2O3 (wt%)	10.3037	10.3567	9.9200	0.3837	0.4367	3.9%	4.4%
SRNL-SCS-2008-00003/Set 2	SB5-04	BaO (wt%)	0.0360	0.0388	0.0390	-0.0030	-0.0002	-7.7%	-0.5%
SRNL-SCS-2008-00003/Set 2	SB5-04	CaO (wt%)	0.6527	0.6793	0.6770	-0.0243	0.0023	-3.6%	0.3%
SRNL-SCS-2008-00003/Set 2	SB5-04	CdO (wt%)	0.0168	0.0168	0.0230	-0.0062	-0.0062	-26.7%	-26.7%
SRNL-SCS-2008-00003/Set 2	SB5-04	Ce2O3 (wt%)	0.0668	0.0668	0.1410	-0.0742	-0.0742	-52.6%	-52.6%
SRNL-SCS-2008-00003/Set 2	SB5-04	Cr2O3 (wt%)	0.1122	0.1128	0.1420	-0.0298	-0.0292	-21.0%	-20.6%
SRNL-SCS-2008-00003/Set 2	SB5-04	CuO (wt%)	0.0131	0.0141	0.0050	0.0081	0.0091	162.9%	181.5%
SRNL-SCS-2008-00003/Set 2	SB5-04	Fe2O3 (wt%)	8.7140	8.5405	8.8340	-0.1200	-0.2935	-1.4%	-3.3%
SRNL-SCS-2008-00003/Set 2	SB5-04	K2O (wt%)	0.0145	0.0161	0.0250	-0.0105	-0.0089	-42.2%	-35.8%
SRNL-SCS-2008-00003/Set 2	SB5-04	La2O3 (wt%)	0.0586	0.0586	0.0620	-0.0034	-0.0034	-5.4%	-5.4%
SRNL-SCS-2008-00003/Set 2	SB5-04	Li2O (wt%)	3.1163	3.2821	3.1000	0.0163	0.1821	0.5%	5.9%
SRNL-SCS-2008-00003/Set 2	SB5-04	MgO (wt%)	0.4502	0.4673	0.4470	0.0032	0.0203	0.7%	4.5%
SRNL-SCS-2008-00003/Set 2	SB5-04	MnO (wt%)	1.9174	1.8509	1.8470	0.0704	0.0039	3.8%	0.2%
SRNL-SCS-2008-00003/Set 2	SB5-04	Na2O (wt%)	14.4910	14.7797	14.3960	0.0950	0.3837	0.7%	2.7%
SRNL-SCS-2008-00003/Set 2	SB5-04	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-04	NiO (wt%)	0.9159	0.9804	1.0370	-0.1211	-0.0566	-11.7%	-5.5%
SRNL-SCS-2008-00003/Set 2	SB5-04	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00003/Set 2	SB5-04	SiO2 (wt%)	44.0696	43.5587	44.7370	-0.6674	-1.1783	-1.5%	-2.6%
SRNL-SCS-2008-00003/Set 2	SB5-04	SO4 (wt%)	0.1498	0.1498	0.2770	-0.1272	-0.1272	-45.9%	-45.9%
SRNL-SCS-2008-00003/Set 2	SB5-04	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-04	TiO2 (wt%)	0.0104	0.0109	0.0100	0.0004	0.0009	4.3%	9.4%
SRNL-SCS-2008-00003/Set 2	SB5-04	U3O8 (wt%)	2.7534	2.8885	2.8260	-0.0726	0.0625	-2.6%	2.2%
SRNL-SCS-2008-00003/Set 2	SB5-04	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-04	ZrO2 (wt%)	0.0905	0.0905	0.0980	-0.0075	-0.0075	-7.6%	-7.6%
SRNL-SCS-2008-00003/Set 2	SB5-04	Sum	99.0782	99.5039	99.6660	-0.5878	-0.1621	-0.6%	-0.2%
SRNL-SCS-2008-00003/Set 2	SB5-05	Al2O3 (wt%)	9.5798	9.9436	9.4600	0.1198	0.4836	1.3%	5.1%
SRNL-SCS-2008-00003/Set 2	SB5-05	B2O3 (wt%)	6.4961	6.4174	6.2000	0.2961	0.2174	4.8%	3.5%
SRNL-SCS-2008-00003/Set 2	SB5-05	BaO (wt%)	0.0377	0.0406	0.0430	-0.0053	-0.0024	-12.4%	-5.6%
SRNL-SCS-2008-00003/Set 2	SB5-05	CaO (wt%)	3.4770	3.6183	3.2270	0.2500	0.3913	7.7%	12.1%
SRNL-SCS-2008-00003/Set 2	SB5-05	CdO (wt%)	0.0126	0.0126	0.0250	-0.0124	-0.0124	-49.7%	-49.7%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 2	SB5-05	Ce2O3 (wt%)	0.0600	0.0600	0.1550	-0.0950	-0.0950	-61.3%	-61.3%
SRNL-SCS-2008-00003/Set 2	SB5-05	Cr2O3 (wt%)	0.1250	0.1256	0.1560	-0.0310	-0.0304	-19.9%	-19.5%
SRNL-SCS-2008-00003/Set 2	SB5-05	CuO (wt%)	0.0063	0.0067	0.0050	0.0013	0.0017	25.2%	34.0%
SRNL-SCS-2008-00003/Set 2	SB5-05	Fe2O3 (wt%)	9.4360	9.2479	9.7450	-0.3090	-0.4971	-3.2%	-5.1%
SRNL-SCS-2008-00003/Set 2	SB5-05	K2O (wt%)	0.0181	0.0201	0.0270	-0.0089	-0.0069	-33.1%	-25.7%
SRNL-SCS-2008-00003/Set 2	SB5-05	La2O3 (wt%)	0.0586	0.0586	0.0680	-0.0094	-0.0094	-13.8%	-13.8%
SRNL-SCS-2008-00003/Set 2	SB5-05	Li2O (wt%)	4.3435	4.4977	4.3400	0.0035	0.1577	0.1%	3.6%
SRNL-SCS-2008-00003/Set 2	SB5-05	MgO (wt%)	0.4851	0.5034	0.4940	-0.0089	0.0094	-1.8%	1.9%
SRNL-SCS-2008-00003/Set 2	SB5-05	MnO (wt%)	2.0530	1.9817	2.0380	0.0150	-0.0563	0.7%	-2.8%
SRNL-SCS-2008-00003/Set 2	SB5-05	Na2O (wt%)	13.5373	13.8069	13.5340	0.0033	0.2729	0.0%	2.0%
SRNL-SCS-2008-00003/Set 2	SB5-05	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-05	NiO (wt%)	1.0059	1.0768	1.1440	-0.1381	-0.0672	-12.1%	-5.9%
SRNL-SCS-2008-00003/Set 2	SB5-05	PbO (wt%)	0.0108	0.0108	0.0090	0.0018	0.0018	19.7%	19.7%
SRNL-SCS-2008-00003/Set 2	SB5-05	SiO2 (wt%)	44.6579	44.1400	45.4310	-0.7731	-1.2910	-1.7%	-2.8%
SRNL-SCS-2008-00003/Set 2	SB5-05	SO4 (wt%)	0.1498	0.1498	0.2890	-0.1392	-0.1392	-48.2%	-48.2%
SRNL-SCS-2008-00003/Set 2	SB5-05	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-05	TiO2 (wt%)	0.0129	0.0136	0.0110	0.0019	0.0026	17.5%	23.3%
SRNL-SCS-2008-00003/Set 2	SB5-05	U3O8 (wt%)	3.0188	3.1669	3.1170	-0.0982	0.0499	-3.2%	1.6%
SRNL-SCS-2008-00003/Set 2	SB5-05	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-05	ZrO2 (wt%)	0.0969	0.0969	0.1080	-0.0111	-0.0111	-10.3%	-10.3%
SRNL-SCS-2008-00003/Set 2	SB5-05	Sum	98.7492	99.0661	99.6320	-0.8828	-0.5659	-0.9%	-0.6%
SRNL-SCS-2008-00003/Set 2	SB5-06	Al2O3 (wt%)	9.7309	9.7569	9.4600	0.2709	0.2969	2.9%	3.1%
SRNL-SCS-2008-00003/Set 2	SB5-06	B2O3 (wt%)	7.0838	6.9982	6.8200	0.2638	0.1782	3.9%	2.6%
SRNL-SCS-2008-00003/Set 2	SB5-06	BaO (wt%)	0.0388	0.0407	0.0430	-0.0042	-0.0023	-9.8%	-5.4%
SRNL-SCS-2008-00003/Set 2	SB5-06	CaO (wt%)	2.1268	2.1551	1.9870	0.1398	0.1681	7.0%	8.5%
SRNL-SCS-2008-00003/Set 2	SB5-06	CdO (wt%)	0.0146	0.0146	0.0250	-0.0104	-0.0104	-41.7%	-41.7%
SRNL-SCS-2008-00003/Set 2	SB5-06	Ce2O3 (wt%)	0.1063	0.1063	0.1550	-0.0487	-0.0487	-31.4%	-31.4%
SRNL-SCS-2008-00003/Set 2	SB5-06	Cr2O3 (wt%)	0.1166	0.1145	0.1560	-0.0394	-0.0415	-25.3%	-26.6%
SRNL-SCS-2008-00003/Set 2	SB5-06	CuO (wt%)	0.0097	0.0101	0.0050	0.0047	0.0051	94.0%	101.1%
SRNL-SCS-2008-00003/Set 2	SB5-06	Fe2O3 (wt%)	9.6076	9.5143	9.7450	-0.1374	-0.2307	-1.4%	-2.4%
SRNL-SCS-2008-00003/Set 2	SB5-06	K2O (wt%)	0.0151	0.0162	0.0270	-0.0119	-0.0108	-44.2%	-39.9%
SRNL-SCS-2008-00003/Set 2	SB5-06	La2O3 (wt%)	0.0586	0.0586	0.0680	-0.0094	-0.0094	-13.8%	-13.8%
SRNL-SCS-2008-00003/Set 2	SB5-06	Li2O (wt%)	4.3004	4.4531	4.3400	-0.0396	0.1131	-0.9%	2.6%
SRNL-SCS-2008-00003/Set 2	SB5-06	MgO (wt%)	0.4954	0.5051	0.4940	0.0014	0.0111	0.3%	2.3%
SRNL-SCS-2008-00003/Set 2	SB5-06	MnO (wt%)	2.0433	2.0147	2.0380	0.0053	-0.0233	0.3%	-1.1%
SRNL-SCS-2008-00003/Set 2	SB5-06	Na2O (wt%)	13.7193	13.4764	13.5340	0.1853	-0.0576	1.4%	-0.4%
SRNL-SCS-2008-00003/Set 2	SB5-06	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-06	NiO (wt%)	1.0142	1.0646	1.1440	-0.1298	-0.0794	-11.3%	-6.9%
SRNL-SCS-2008-00003/Set 2	SB5-06	PbO (wt%)	0.0108	0.0108	0.0090	0.0018	0.0018	19.7%	19.7%
SRNL-SCS-2008-00003/Set 2	SB5-06	SiO2 (wt%)	45.9950	45.0513	46.0510	-0.0560	-0.9997	-0.1%	-2.2%
SRNL-SCS-2008-00003/Set 2	SB5-06	SO4 (wt%)	0.2284	0.2284	0.2890	-0.0606	-0.0606	-21.0%	-21.0%
SRNL-SCS-2008-00003/Set 2	SB5-06	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-06	TiO2 (wt%)	0.0129	0.0132	0.0110	0.0019	0.0022	17.5%	20.1%
SRNL-SCS-2008-00003/Set 2	SB5-06	U3O8 (wt%)	3.1072	3.1411	3.1170	-0.0098	0.0241	-0.3%	0.8%
SRNL-SCS-2008-00003/Set 2	SB5-06	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-06	ZrO2 (wt%)	0.0993	0.0993	0.1080	-0.0087	-0.0087	-8.1%	-8.1%
SRNL-SCS-2008-00003/Set 2	SB5-06	Sum	100.0051	98.9138	99.6320	0.3731	-0.7182	0.4%	-0.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	Al2O3 (wt%)	9.4522	9.8112	9.4600	-0.0078	0.3512	-0.1%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	B2O3 (wt%)	8.6374	8.5329	8.6800	-0.0426	-0.1471	-0.5%	-1.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	BaO (wt%)	0.0382	0.0412	0.0430	-0.0048	-0.0018	-11.1%	-4.2%
SRNL-SCS-2008-00003/Set 2	SB5-07	CaO (wt%)	2.0918	2.1768	1.9870	0.1048	0.1898	5.3%	9.6%
SRNL-SCS-2008-00003/Set 2	SB5-07	CdO (wt%)	0.0163	0.0163	0.0250	-0.0087	-0.0087	-34.9%	-34.9%
SRNL-SCS-2008-00003/Set 2	SB5-07	Ce2O3 (wt%)	0.0978	0.0978	0.1550	-0.0572	-0.0572	-36.9%	-36.9%
SRNL-SCS-2008-00003/Set 2	SB5-07	Cr2O3 (wt%)	0.1268	0.1274	0.1560	-0.0292	-0.0286	-18.7%	-18.3%
SRNL-SCS-2008-00003/Set 2	SB5-07	CuO (wt%)	0.0150	0.0161	0.0050	0.0100	0.0111	200.4%	221.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	Fe2O3 (wt%)	9.6112	9.4216	9.7450	-0.1338	-0.3234	-1.4%	-3.3%
SRNL-SCS-2008-00003/Set 2	SB5-07	K2O (wt%)	0.0190	0.0211	0.0270	-0.0080	-0.0059	-29.7%	-22.0%
SRNL-SCS-2008-00003/Set 2	SB5-07	La2O3 (wt%)	0.0586	0.0586	0.0680	-0.0094	-0.0094	-13.8%	-13.8%
SRNL-SCS-2008-00003/Set 2	SB5-07	Li2O (wt%)	3.6922	3.8233	3.7200	-0.0278	0.1033	-0.7%	2.8%
SRNL-SCS-2008-00003/Set 2	SB5-07	MgO (wt%)	0.4958	0.5146	0.4940	0.0018	0.0206	0.4%	4.2%
SRNL-SCS-2008-00003/Set 2	SB5-07	MnO (wt%)	2.1111	2.0384	2.0380	0.0731	0.0004	3.6%	0.0%
SRNL-SCS-2008-00003/Set 2	SB5-07	Na2O (wt%)	13.3385	13.6041	13.5340	-0.1955	0.0701	-1.4%	0.5%
SRNL-SCS-2008-00003/Set 2	SB5-07	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-07	NiO (wt%)	1.0104	1.0815	1.1440	-0.1336	-0.0625	-11.7%	-5.5%
SRNL-SCS-2008-00003/Set 2	SB5-07	PbO (wt%)	0.0108	0.0108	0.0090	0.0018	0.0018	19.7%	19.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	SiO2 (wt%)	44.7649	44.2473	44.8110	-0.0461	-0.5637	-0.1%	-1.3%
SRNL-SCS-2008-00003/Set 2	SB5-07	SO4 (wt%)	0.1887	0.1887	0.2890	-0.1003	-0.1003	-34.7%	-34.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 2	SB5-07	TiO2 (wt%)	0.0125	0.0131	0.0110	0.0015	0.0021	13.7%	19.3%
SRNL-SCS-2008-00003/Set 2	SB5-07	U3O8 (wt%)	3.0158	3.1638	3.1170	-0.1012	0.0468	-3.2%	1.5%
SRNL-SCS-2008-00003/Set 2	SB5-07	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-07	ZrO2 (wt%)	0.0959	0.0959	0.1080	-0.0121	-0.0121	-11.2%	-11.2%
SRNL-SCS-2008-00003/Set 2	SB5-07	Sum	98.9712	99.1730	99.6320	-0.6608	-0.4590	-0.7%	-0.5%
SRNL-SCS-2008-00003/Set 2	SB5-08	Al2O3 (wt%)	9.5136	9.5366	9.4600	0.0536	0.0766	0.6%	0.8%
SRNL-SCS-2008-00003/Set 2	SB5-08	B2O3 (wt%)	10.1507	10.2022	9.9200	0.2307	0.2822	2.3%	2.8%
SRNL-SCS-2008-00003/Set 2	SB5-08	BaO (wt%)	0.0416	0.0436	0.0430	-0.0014	0.0006	-3.3%	1.4%
SRNL-SCS-2008-00003/Set 2	SB5-08	CaO (wt%)	0.7524	0.7619	0.7470	0.0054	0.0149	0.7%	2.0%
SRNL-SCS-2008-00003/Set 2	SB5-08	CdO (wt%)	0.0160	0.0160	0.0250	-0.0090	-0.0090	-36.0%	-36.0%
SRNL-SCS-2008-00003/Set 2	SB5-08	Ce2O3 (wt%)	0.0638	0.0638	0.1550	-0.0912	-0.0912	-58.8%	-58.8%
SRNL-SCS-2008-00003/Set 2	SB5-08	Cr2O3 (wt%)	0.1323	0.1300	0.1560	-0.0237	-0.0260	-15.2%	-16.7%
SRNL-SCS-2008-00003/Set 2	SB5-08	CuO (wt%)	0.0100	0.0104	0.0050	0.0050	0.0054	100.3%	107.5%
SRNL-SCS-2008-00003/Set 2	SB5-08	Fe2O3 (wt%)	9.5218	9.4324	9.7450	-0.2232	-0.3126	-2.3%	-3.2%
SRNL-SCS-2008-00003/Set 2	SB5-08	K2O (wt%)	0.0521	0.0561	0.0270	0.0251	0.0291	93.0%	108.0%
SRNL-SCS-2008-00003/Set 2	SB5-08	La2O3 (wt%)	0.0586	0.0586	0.0680	-0.0094	-0.0094	-13.8%	-13.8%
SRNL-SCS-2008-00003/Set 2	SB5-08	Li2O (wt%)	3.0840	3.2480	3.1000	-0.0160	0.1480	-0.5%	4.8%
SRNL-SCS-2008-00003/Set 2	SB5-08	MgO (wt%)	0.5128	0.5230	0.4940	0.0188	0.0290	3.8%	5.9%
SRNL-SCS-2008-00003/Set 2	SB5-08	MnO (wt%)	2.0207	1.9915	2.0380	-0.0173	-0.0465	-0.8%	-2.3%
SRNL-SCS-2008-00003/Set 2	SB5-08	Na2O (wt%)	14.0394	13.7871	14.1540	-0.1146	-0.3669	-0.8%	-2.6%
SRNL-SCS-2008-00003/Set 2	SB5-08	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-08	NiO (wt%)	1.0829	1.1369	1.1440	-0.0611	-0.0071	-5.3%	-0.6%
SRNL-SCS-2008-00003/Set 2	SB5-08	PbO (wt%)	0.0108	0.0108	0.0090	0.0018	0.0018	19.7%	19.7%
SRNL-SCS-2008-00003/Set 2	SB5-08	SiO2 (wt%)	45.1927	44.2651	44.8110	0.3817	-0.5459	0.9%	-1.2%
SRNL-SCS-2008-00003/Set 2	SB5-08	SO4 (wt%)	0.2292	0.2292	0.2890	-0.0598	-0.0598	-20.7%	-20.7%
SRNL-SCS-2008-00003/Set 2	SB5-08	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-08	TiO2 (wt%)	0.0142	0.0145	0.0110	0.0032	0.0035	28.9%	31.7%
SRNL-SCS-2008-00003/Set 2	SB5-08	U3O8 (wt%)	3.0453	3.0776	3.1170	-0.0717	-0.0394	-2.3%	-1.3%
SRNL-SCS-2008-00003/Set 2	SB5-08	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-08	ZrO2 (wt%)	0.0983	0.0983	0.1080	-0.0097	-0.0097	-9.0%	-9.0%
SRNL-SCS-2008-00003/Set 2	SB5-08	Sum	99.7136	98.7638	99.6320	0.0816	-0.8682	0.1%	-0.9%
SRNL-SCS-2008-00003/Set 2	SB5-09	Al2O3 (wt%)	8.0776	8.0962	7.9470	0.1306	0.1492	1.6%	1.9%
SRNL-SCS-2008-00003/Set 2	SB5-09	B2O3 (wt%)	6.4318	6.4653	6.2000	0.2318	0.2653	3.7%	4.3%
SRNL-SCS-2008-00003/Set 2	SB5-09	BaO (wt%)	0.0408	0.0427	0.0460	-0.0052	-0.0033	-11.4%	-7.1%
SRNL-SCS-2008-00003/Set 2	SB5-09	CaO (wt%)	3.4630	3.5100	3.2810	0.1820	0.2290	5.5%	7.0%
SRNL-SCS-2008-00003/Set 2	SB5-09	CdO (wt%)	0.0163	0.0163	0.0270	-0.0107	-0.0107	-39.7%	-39.7%
SRNL-SCS-2008-00003/Set 2	SB5-09	Ce2O3 (wt%)	0.0990	0.0990	0.1670	-0.0680	-0.0680	-40.7%	-40.7%
SRNL-SCS-2008-00003/Set 2	SB5-09	Cr2O3 (wt%)	0.1348	0.1325	0.1670	-0.0322	-0.0345	-19.3%	-20.7%
SRNL-SCS-2008-00003/Set 2	SB5-09	CuO (wt%)	0.0100	0.0104	0.0050	0.0050	0.0054	100.3%	107.5%
SRNL-SCS-2008-00003/Set 2	SB5-09	Fe2O3 (wt%)	10.1687	10.0682	10.4470	-0.2783	-0.3788	-2.7%	-3.6%
SRNL-SCS-2008-00003/Set 2	SB5-09	K2O (wt%)	0.0217	0.0234	0.0300	-0.0083	-0.0066	-27.7%	-22.1%
SRNL-SCS-2008-00003/Set 2	SB5-09	La2O3 (wt%)	0.0586	0.0586	0.0730	-0.0144	-0.0144	-19.7%	-19.7%
SRNL-SCS-2008-00003/Set 2	SB5-09	Li2O (wt%)	4.2843	4.5121	4.3400	-0.0557	0.1721	-1.3%	4.0%
SRNL-SCS-2008-00003/Set 2	SB5-09	MgO (wt%)	0.5439	0.5547	0.5290	0.0149	0.0257	2.8%	4.8%
SRNL-SCS-2008-00003/Set 2	SB5-09	MnO (wt%)	2.1660	2.1344	2.1840	-0.0180	-0.0496	-0.8%	-2.3%
SRNL-SCS-2008-00003/Set 2	SB5-09	Na2O (wt%)	13.5878	13.3422	13.6500	-0.0622	-0.3078	-0.5%	-2.3%
SRNL-SCS-2008-00003/Set 2	SB5-09	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-09	NiO (wt%)	1.1118	1.1672	1.2270	-0.1152	-0.0598	-9.4%	-4.9%
SRNL-SCS-2008-00003/Set 2	SB5-09	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00003/Set 2	SB5-09	SiO2 (wt%)	44.9253	44.0033	45.4890	-0.5637	-1.4857	-1.2%	-3.3%
SRNL-SCS-2008-00003/Set 2	SB5-09	SO4 (wt%)	0.3191	0.3191	0.3100	0.0091	0.0091	2.9%	2.9%
SRNL-SCS-2008-00003/Set 2	SB5-09	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-09	TiO2 (wt%)	0.0142	0.0145	0.0120	0.0022	0.0025	18.2%	20.8%
SRNL-SCS-2008-00003/Set 2	SB5-09	U3O8 (wt%)	3.2605	3.2942	3.3420	-0.0815	-0.0478	-2.4%	-1.4%
SRNL-SCS-2008-00003/Set 2	SB5-09	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00003/Set 2	SB5-09	ZrO2 (wt%)	0.1165	0.1165	0.1160	0.0005	0.0005	0.4%	0.4%
SRNL-SCS-2008-00003/Set 2	SB5-09	Sum	98.9327	98.0619	99.6060	-0.6733	-1.5441	-0.7%	-1.6%
SRNL-SCS-2008-00003/Set 2	SB5-10	Al2O3 (wt%)	8.1437	8.1634	7.9470	0.1967	0.2164	2.5%	2.7%
SRNL-SCS-2008-00003/Set 2	SB5-10	B2O3 (wt%)	6.8825	6.7992	6.8200	0.0625	-0.0208	0.9%	-0.3%
SRNL-SCS-2008-00003/Set 2	SB5-10	BaO (wt%)	0.0419	0.0439	0.0460	-0.0041	-0.0021	-9.0%	-4.6%
SRNL-SCS-2008-00003/Set 2	SB5-10	CaO (wt%)	2.1863	2.2155	2.0410	0.1453	0.1745	7.1%	8.5%
SRNL-SCS-2008-00003/Set 2	SB5-10	CdO (wt%)	0.0191	0.0191	0.0270	-0.0079	-0.0079	-29.1%	-29.1%
SRNL-SCS-2008-00003/Set 2	SB5-10	Ce2O3 (wt%)	0.1455	0.1455	0.1670	-0.0215	-0.0215	-12.9%	-12.9%
SRNL-SCS-2008-00003/Set 2	SB5-10	Cr2O3 (wt%)	0.1224	0.1203	0.1670	-0.0446	-0.0467	-26.7%	-28.0%
SRNL-SCS-2008-00003/Set 2	SB5-10	CuO (wt%)	0.0100	0.0104	0.0050	0.0050	0.0054	100.3%	107.5%
SRNL-SCS-2008-00003/Set 2	SB5-10	Fe2O3 (wt%)	10.2581	10.1586	10.4470	-0.1889	-0.2884	-1.8%	-2.8%
SRNL-SCS-2008-00003/Set 2	SB5-10	K2O (wt%)	0.0211	0.0227	0.0300	-0.0089	-0.0073	-29.7%	-24.3%
SRNL-SCS-2008-00003/Set 2	SB5-10	La2O3 (wt%)	0.0586	0.0586	0.0730	-0.0144	-0.0144	-19.7%	-19.7%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 2	SB5-10	Li2O (wt%)	4.3327	4.4865	4.3400	-0.0073	0.1465	-0.2%	3.4%
SRNL-SCS-2008-00003/Set 2	SB5-10	MgO (wt%)	0.5307	0.5413	0.5290	0.0017	0.0123	0.3%	2.3%
SRNL-SCS-2008-00003/Set 2	SB5-10	MnO (wt%)	2.2661	2.2334	2.1840	0.0821	0.0494	3.8%	2.3%
SRNL-SCS-2008-00003/Set 2	SB5-10	Na2O (wt%)	13.5373	13.2947	13.6500	-0.1127	-0.3553	-0.8%	-2.6%
SRNL-SCS-2008-00003/Set 2	SB5-10	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-10	NiO (wt%)	1.0896	1.1440	1.2270	-0.1374	-0.0830	-11.2%	-6.8%
SRNL-SCS-2008-00003/Set 2	SB5-10	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00003/Set 2	SB5-10	SiO2 (wt%)	46.9576	45.9939	46.1090	0.8486	-0.1151	1.8%	-0.2%
SRNL-SCS-2008-00003/Set 2	SB5-10	SO4 (wt%)	0.3206	0.3206	0.3100	0.0106	0.0106	3.4%	3.4%
SRNL-SCS-2008-00003/Set 2	SB5-10	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-10	TiO2 (wt%)	0.0146	0.0149	0.0120	0.0026	0.0029	21.6%	24.3%
SRNL-SCS-2008-00003/Set 2	SB5-10	U3O8 (wt%)	3.2959	3.3302	3.3420	-0.0461	-0.0118	-1.4%	-0.4%
SRNL-SCS-2008-00003/Set 2	SB5-10	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00003/Set 2	SB5-10	ZrO2 (wt%)	0.1067	0.1067	0.1160	-0.0093	-0.0093	-8.0%	-8.0%
SRNL-SCS-2008-00003/Set 2	SB5-10	Sum	100.4220	99.3044	99.6060	0.8160	-0.3016	0.8%	-0.3%
SRNL-SCS-2008-00003/Set 2	SB5-11	Al2O3 (wt%)	7.8273	8.1245	7.9470	-0.1197	0.1775	-1.5%	2.2%
SRNL-SCS-2008-00003/Set 2	SB5-11	B2O3 (wt%)	8.6615	8.7045	8.6800	-0.0185	0.0245	-0.2%	0.3%
SRNL-SCS-2008-00003/Set 2	SB5-11	BaO (wt%)	0.0416	0.0448	0.0460	-0.0044	-0.0012	-9.6%	-2.6%
SRNL-SCS-2008-00003/Set 2	SB5-11	CaO (wt%)	2.1408	2.2277	2.0410	0.0998	0.1867	4.9%	9.1%
SRNL-SCS-2008-00003/Set 2	SB5-11	CdO (wt%)	0.0194	0.0194	0.0270	-0.0076	-0.0076	-28.1%	-28.1%
SRNL-SCS-2008-00003/Set 2	SB5-11	Ce2O3 (wt%)	0.1473	0.1473	0.1670	-0.0197	-0.0197	-11.8%	-11.8%
SRNL-SCS-2008-00003/Set 2	SB5-11	Cr2O3 (wt%)	0.1414	0.1421	0.1670	-0.0256	-0.0249	-15.3%	-14.9%
SRNL-SCS-2008-00003/Set 2	SB5-11	CuO (wt%)	0.0138	0.0147	0.0050	0.0088	0.0097	175.4%	194.9%
SRNL-SCS-2008-00003/Set 2	SB5-11	Fe2O3 (wt%)	9.6433	9.4517	10.4470	-0.8037	-0.9953	-7.7%	-9.5%
SRNL-SCS-2008-00003/Set 2	SB5-11	K2O (wt%)	0.0199	0.0221	0.0300	-0.0101	-0.0079	-33.7%	-26.4%
SRNL-SCS-2008-00003/Set 2	SB5-11	La2O3 (wt%)	0.0586	0.0586	0.0730	-0.0144	-0.0144	-19.7%	-19.7%
SRNL-SCS-2008-00003/Set 2	SB5-11	Li2O (wt%)	3.6438	3.8376	3.7200	-0.0762	0.1176	-2.0%	3.2%
SRNL-SCS-2008-00003/Set 2	SB5-11	MgO (wt%)	0.5307	0.5507	0.5290	0.0017	0.0217	0.3%	4.1%
SRNL-SCS-2008-00003/Set 2	SB5-11	MnO (wt%)	2.1595	2.0846	2.1840	-0.0245	-0.0994	-1.1%	-4.6%
SRNL-SCS-2008-00003/Set 2	SB5-11	Na2O (wt%)	13.1834	13.4461	13.6500	-0.4666	-0.2039	-3.4%	-1.5%
SRNL-SCS-2008-00003/Set 2	SB5-11	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-11	NiO (wt%)	1.1150	1.1936	1.2270	-0.1120	-0.0334	-9.1%	-2.7%
SRNL-SCS-2008-00003/Set 2	SB5-11	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00003/Set 2	SB5-11	SiO2 (wt%)	44.1765	43.6671	44.8690	-0.6925	-1.2019	-1.5%	-2.7%
SRNL-SCS-2008-00003/Set 2	SB5-11	SO4 (wt%)	0.2666	0.2666	0.3100	-0.0434	-0.0434	-14.0%	-14.0%
SRNL-SCS-2008-00003/Set 2	SB5-11	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-11	TiO2 (wt%)	0.0154	0.0162	0.0120	0.0034	0.0042	28.6%	34.9%
SRNL-SCS-2008-00003/Set 2	SB5-11	U3O8 (wt%)	3.1691	3.3245	3.3420	-0.1729	-0.0175	-5.2%	-0.5%
SRNL-SCS-2008-00003/Set 2	SB5-11	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00003/Set 2	SB5-11	ZrO2 (wt%)	0.1104	0.1104	0.1160	-0.0056	-0.0056	-4.8%	-4.8%
SRNL-SCS-2008-00003/Set 2	SB5-11	Sum	97.1665	97.5359	99.6060	-2.4395	-2.0701	-2.4%	-2.1%
SRNL-SCS-2008-00003/Set 2	SB5-12	Al2O3 (wt%)	7.8556	8.1539	7.9470	-0.0914	0.2069	-1.2%	2.6%
SRNL-SCS-2008-00003/Set 2	SB5-12	B2O3 (wt%)	10.0461	10.0985	9.9200	0.1261	0.1785	1.3%	1.8%
SRNL-SCS-2008-00003/Set 2	SB5-12	BaO (wt%)	0.0419	0.0451	0.0460	-0.0041	-0.0009	-9.0%	-1.9%
SRNL-SCS-2008-00003/Set 2	SB5-12	CaO (wt%)	0.7979	0.8304	0.8010	-0.0031	0.0294	-0.4%	3.7%
SRNL-SCS-2008-00003/Set 2	SB5-12	CdO (wt%)	0.0183	0.0183	0.0270	-0.0087	-0.0087	-32.3%	-32.3%
SRNL-SCS-2008-00003/Set 2	SB5-12	Ce2O3 (wt%)	0.1467	0.1467	0.1670	-0.0203	-0.0203	-12.2%	-12.2%
SRNL-SCS-2008-00003/Set 2	SB5-12	Cr2O3 (wt%)	0.1589	0.1598	0.1670	-0.0081	-0.0072	-4.8%	-4.3%
SRNL-SCS-2008-00003/Set 2	SB5-12	CuO (wt%)	0.0131	0.0141	0.0050	0.0081	0.0091	162.9%	181.5%
SRNL-SCS-2008-00003/Set 2	SB5-12	Fe2O3 (wt%)	9.8578	9.6628	10.4470	-0.5892	-0.7842	-5.6%	-7.5%
SRNL-SCS-2008-00003/Set 2	SB5-12	K2O (wt%)	0.0193	0.0214	0.0300	-0.0107	-0.0086	-35.8%	-28.6%
SRNL-SCS-2008-00003/Set 2	SB5-12	La2O3 (wt%)	0.0586	0.0586	0.0730	-0.0144	-0.0144	-19.7%	-19.7%
SRNL-SCS-2008-00003/Set 2	SB5-12	Li2O (wt%)	3.1109	3.2764	3.1000	0.0109	0.1764	0.4%	5.7%
SRNL-SCS-2008-00003/Set 2	SB5-12	MgO (wt%)	0.5414	0.5619	0.5290	0.0124	0.0329	2.4%	6.2%
SRNL-SCS-2008-00003/Set 2	SB5-12	MnO (wt%)	2.2144	2.1381	2.1840	0.0304	-0.0459	1.4%	-2.1%
SRNL-SCS-2008-00003/Set 2	SB5-12	Na2O (wt%)	13.8035	14.0785	14.2700	-0.4665	-0.1915	-3.3%	-1.3%
SRNL-SCS-2008-00003/Set 2	SB5-12	Nb2O5 (wt%)	0.0072	0.0072	0.0000	0.0072	0.0072		
SRNL-SCS-2008-00003/Set 2	SB5-12	NiO (wt%)	1.1227	1.2018	1.2270	-0.1043	-0.0252	-8.5%	-2.1%
SRNL-SCS-2008-00003/Set 2	SB5-12	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00003/Set 2	SB5-12	SiO2 (wt%)	44.9253	44.4077	44.8690	0.0563	-0.4613	0.1%	-1.0%
SRNL-SCS-2008-00003/Set 2	SB5-12	SO4 (wt%)	0.2262	0.2262	0.3100	-0.0838	-0.0838	-27.0%	-27.0%
SRNL-SCS-2008-00003/Set 2	SB5-12	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	SB5-12	TiO2 (wt%)	0.0133	0.0140	0.0120	0.0013	0.0020	11.2%	16.7%
SRNL-SCS-2008-00003/Set 2	SB5-12	U3O8 (wt%)	3.2015	3.3586	3.3420	-0.1405	0.0166	-4.2%	0.5%
SRNL-SCS-2008-00003/Set 2	SB5-12	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00003/Set 2	SB5-12	ZrO2 (wt%)	0.1067	0.1067	0.1160	-0.0093	-0.0093	-8.0%	-8.0%
SRNL-SCS-2008-00003/Set 2	SB5-12	Sum	98.3613	98.6005	99.6060	-1.2447	-0.9455	-1.2%	-0.9%
SRNL-SCS-2008-00003/Set 2	U std	Al2O3 (wt%)	3.9365	4.0138	4.1000	-0.1635	-0.0862	-4.0%	-2.1%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 2	U std	B2O3 (wt%)	9.0130	8.9811	9.2090	-0.1960	-0.2279	-2.1%	-2.5%
SRNL-SCS-2008-00003/Set 2	U std	BaO (wt%)	0.0056	0.0059	0.0000	0.0056	0.0059		
SRNL-SCS-2008-00003/Set 2	U std	CaO (wt%)	1.2649	1.2983	1.3010	-0.0361	-0.0027	-2.8%	-0.2%
SRNL-SCS-2008-00003/Set 2	U std	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 2	U std	Ce2O3 (wt%)	0.0184	0.0184	0.0000	0.0184	0.0184		
SRNL-SCS-2008-00003/Set 2	U std	Cr2O3 (wt%)	0.2388	0.2374	0.0000	0.2388	0.2374		
SRNL-SCS-2008-00003/Set 2	U std	CuO (wt%)	0.0063	0.0066	0.0000	0.0063	0.0066		
SRNL-SCS-2008-00003/Set 2	U std	Fe2O3 (wt%)	13.4511	13.2523	13.1960	0.2551	0.0563	1.9%	0.4%
SRNL-SCS-2008-00003/Set 2	U std	K2O (wt%)	2.6973	2.9511	2.9990	-0.3017	-0.0479	-10.1%	-1.6%
SRNL-SCS-2008-00003/Set 2	U std	La2O3 (wt%)	0.0586	0.0586	0.0000	0.0586	0.0586		
SRNL-SCS-2008-00003/Set 2	U std	Li2O (wt%)	2.9387	3.0688	3.0570	-0.1183	0.0118	-3.9%	0.4%
SRNL-SCS-2008-00003/Set 2	U std	MgO (wt%)	1.1868	1.2208	1.2100	-0.0232	0.0108	-1.9%	0.9%
SRNL-SCS-2008-00003/Set 2	U std	MnO (wt%)	2.8858	2.8149	2.8920	-0.0062	-0.0771	-0.2%	-2.7%
SRNL-SCS-2008-00003/Set 2	U std	Na2O (wt%)	11.6624	11.6666	11.7950	-0.1326	-0.1284	-1.1%	-1.1%
SRNL-SCS-2008-00003/Set 2	U std	Nb2O5 (wt%)	0.0687	0.0687	0.0000	0.0687	0.0687		
SRNL-SCS-2008-00003/Set 2	U std	NiO (wt%)	0.9483	1.0044	1.1200	-0.1717	-0.1156	-15.3%	-10.3%
SRNL-SCS-2008-00003/Set 2	U std	PbO (wt%)	0.0108	0.0108	0.0000	0.0108	0.0108		
SRNL-SCS-2008-00003/Set 2	U std	SiO2 (wt%)	46.0841	45.3438	45.3530	0.7311	-0.0092	1.6%	0.0%
SRNL-SCS-2008-00003/Set 2	U std	SO4 (wt%)	0.1498	0.1498	0.0000	0.1498	0.1498		
SRNL-SCS-2008-00003/Set 2	U std	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 2	U std	TiO2 (wt%)	0.9517	0.9847	1.0490	-0.0973	-0.0643	-9.3%	-6.1%
SRNL-SCS-2008-00003/Set 2	U std	U3O8 (wt%)	2.3378	2.4060	2.4060	-0.0682	0.0000	-2.8%	0.0%
SRNL-SCS-2008-00003/Set 2	U std	ZnO (wt%)	0.0062	0.0062	0.0000	0.0062	0.0062		
SRNL-SCS-2008-00003/Set 2	U std	ZrO2 (wt%)	0.0068	0.0068	0.0000	0.0068	0.0068		
SRNL-SCS-2008-00003/Set 2	U std	Sum	99.9911	99.6385	99.6870	0.3041	-0.0485	0.3%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	Al2O3 (wt%)	4.8151	4.8770	4.8770	-0.0619	0.0000	-1.3%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	B2O3 (wt%)	7.8109	7.7770	7.7770	0.0339	0.0000	0.4%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	BaO (wt%)	0.1423	0.1510	0.1510	-0.0087	0.0000	-5.8%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	CaO (wt%)	1.1766	1.2200	1.2200	-0.0434	0.0000	-3.6%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	Batch 1	Ce2O3 (wt%)	0.0132	0.0132	0.0000	0.0132	0.0132		
SRNL-SCS-2008-00003/Set 3	Batch 1	Cr2O3 (wt%)	0.1074	0.1070	0.1070	0.0004	0.0000	0.4%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	CuO (wt%)	0.3808	0.3990	0.3990	-0.0182	0.0000	-4.6%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	Fe2O3 (wt%)	13.2092	12.8390	12.8390	0.3702	0.0000	2.9%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	K2O (wt%)	3.0959	3.3270	3.3270	-0.2311	0.0000	-6.9%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	La2O3 (wt%)	0.0586	0.0586	0.0000	0.0586	0.0586		
SRNL-SCS-2008-00003/Set 3	Batch 1	Li2O (wt%)	4.3022	4.4290	4.4290	-0.1268	0.0000	-2.9%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	MgO (wt%)	1.3825	1.4190	1.4190	-0.0365	0.0000	-2.6%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	MnO (wt%)	1.7948	1.7260	1.7260	0.0688	0.0000	4.0%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	Na2O (wt%)	9.0653	9.0030	9.0030	0.0623	0.0000	0.7%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	Nb2O5 (wt%)	0.0492	0.0492	0.0000	0.0492	0.0492		
SRNL-SCS-2008-00003/Set 3	Batch 1	NiO (wt%)	0.7132	0.7510	0.7510	-0.0378	0.0000	-5.0%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	PbO (wt%)	0.0108	0.0108	0.0000	0.0108	0.0108		
SRNL-SCS-2008-00003/Set 3	Batch 1	SiO2 (wt%)	51.3254	50.2200	50.2200	1.1054	0.0000	2.2%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	SO4 (wt%)	0.1498	0.1498	0.0000	0.1498	0.1498		
SRNL-SCS-2008-00003/Set 3	Batch 1	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	Batch 1	TiO2 (wt%)	0.6547	0.6770	0.6770	-0.0223	0.0000	-3.3%	0.0%
SRNL-SCS-2008-00003/Set 3	Batch 1	U3O8 (wt%)	0.0590	0.0592	0.0000	0.0590	0.0592		
SRNL-SCS-2008-00003/Set 3	Batch 1	ZnO (wt%)	0.0062	0.0062	0.0000	0.0062	0.0062		
SRNL-SCS-2008-00003/Set 3	Batch 1	ZrO2 (wt%)	0.0865	0.0865	0.0980	-0.0115	-0.0115	-11.8%	-11.8%
SRNL-SCS-2008-00003/Set 3	Batch 1	Sum	100.4721	99.4181	99.0200	1.4521	0.3981	1.5%	0.4%
SRNL-SCS-2008-00003/Set 3	SB5-13	Al2O3 (wt%)	7.4352	7.4327	7.2170	0.2182	0.2157	3.0%	3.0%
SRNL-SCS-2008-00003/Set 3	SB5-13	B2O3 (wt%)	6.5122	6.3382	6.2000	0.3122	0.1382	5.0%	2.2%
SRNL-SCS-2008-00003/Set 3	SB5-13	BaO (wt%)	0.0639	0.0674	0.0630	0.0009	0.0044	1.5%	6.9%
SRNL-SCS-2008-00003/Set 3	SB5-13	CaO (wt%)	3.5295	3.6530	3.3360	0.1935	0.3170	5.8%	9.5%
SRNL-SCS-2008-00003/Set 3	SB5-13	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	SB5-13	Ce2O3 (wt%)	0.0949	0.0949	0.1010	-0.0061	-0.0061	-6.1%	-6.1%
SRNL-SCS-2008-00003/Set 3	SB5-13	Cr2O3 (wt%)	0.0950	0.0936	0.0930	0.0020	0.0006	2.2%	0.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	CuO (wt%)	0.0360	0.0375	0.0330	0.0030	0.0045	9.1%	13.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	Fe2O3 (wt%)	11.1088	10.5653	10.5040	0.6048	0.0613	5.8%	0.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	K2O (wt%)	0.0771	0.0830	0.0770	0.0001	0.0060	0.1%	7.8%
SRNL-SCS-2008-00003/Set 3	SB5-13	La2O3 (wt%)	0.0586	0.0586	0.0180	0.0406	0.0406	225.8%	225.8%
SRNL-SCS-2008-00003/Set 3	SB5-13	Li2O (wt%)	4.3542	4.4639	4.3400	0.0142	0.1239	0.3%	2.9%
SRNL-SCS-2008-00003/Set 3	SB5-13	MgO (wt%)	0.4759	0.4848	0.4670	0.0089	0.0178	1.9%	3.8%
SRNL-SCS-2008-00003/Set 3	SB5-13	MnO (wt%)	2.5792	2.4306	2.3160	0.2632	0.1146	11.4%	4.9%
SRNL-SCS-2008-00003/Set 3	SB5-13	Na2O (wt%)	14.6123	14.3451	14.6780	-0.0657	-0.3329	-0.4%	-2.3%
SRNL-SCS-2008-00003/Set 3	SB5-13	Nb2O5 (wt%)	0.0358	0.0358	0.0000	0.0358	0.0358		
SRNL-SCS-2008-00003/Set 3	SB5-13	NiO (wt%)	1.1017	1.1521	1.1980	-0.0963	-0.0459	-8.0%	-3.8%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 3	SB5-13	PbO (wt%)	0.0409	0.0409	0.0360	0.0049	0.0049	13.7%	13.7%
SRNL-SCS-2008-00003/Set 3	SB5-13	SiO2 (wt%)	46.6367	44.9568	45.3380	1.2987	-0.3812	2.9%	-0.8%
SRNL-SCS-2008-00003/Set 3	SB5-13	SO4 (wt%)	0.5438	0.5438	0.5470	-0.0032	-0.0032	-0.6%	-0.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-13	TiO2 (wt%)	0.3628	0.3731	0.3500	0.0128	0.0231	3.7%	6.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	U3O8 (wt%)	2.9804	2.9420	2.9250	0.0554	0.0170	1.9%	0.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	ZnO (wt%)	0.0439	0.0439	0.0420	0.0019	0.0019	4.5%	4.5%
SRNL-SCS-2008-00003/Set 3	SB5-13	ZrO2 (wt%)	0.1152	0.1152	0.1170	-0.0018	-0.0018	-1.6%	-1.6%
SRNL-SCS-2008-00003/Set 3	SB5-13	Sum	102.9566	100.4147	99.9960	2.9606	0.4187	3.0%	0.4%
SRNL-SCS-2008-00003/Set 3	SB5-14	Al2O3 (wt%)	7.3171	7.3171	7.2170	0.1001	0.0987	1.4%	1.4%
SRNL-SCS-2008-00003/Set 3	SB5-14	B2O3 (wt%)	6.8262	6.9570	6.8200	0.0062	0.1370	0.1%	2.0%
SRNL-SCS-2008-00003/Set 3	SB5-14	BaO (wt%)	0.0550	0.0579	0.0630	-0.0080	-0.0051	-12.7%	-8.0%
SRNL-SCS-2008-00003/Set 3	SB5-14	CaO (wt%)	2.1478	2.2216	2.0960	0.0518	0.1256	2.5%	6.0%
SRNL-SCS-2008-00003/Set 3	SB5-14	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	SB5-14	Ce2O3 (wt%)	0.0826	0.0826	0.1010	-0.0184	-0.0184	-18.2%	-18.2%
SRNL-SCS-2008-00003/Set 3	SB5-14	Cr2O3 (wt%)	0.0906	0.0893	0.0930	-0.0024	-0.0037	-2.6%	-4.0%
SRNL-SCS-2008-00003/Set 3	SB5-14	CuO (wt%)	0.0379	0.0395	0.0330	0.0049	0.0065	14.7%	19.6%
SRNL-SCS-2008-00003/Set 3	SB5-14	Fe2O3 (wt%)	10.6942	10.1684	10.5040	0.1902	-0.3356	1.8%	-3.2%
SRNL-SCS-2008-00003/Set 3	SB5-14	K2O (wt%)	0.0876	0.0945	0.0770	0.0106	0.0175	13.8%	22.7%
SRNL-SCS-2008-00003/Set 3	SB5-14	La2O3 (wt%)	0.0586	0.0586	0.0180	0.0406	0.0406	225.8%	225.8%
SRNL-SCS-2008-00003/Set 3	SB5-14	Li2O (wt%)	4.3596	4.5069	4.3400	0.0196	0.1669	0.5%	3.8%
SRNL-SCS-2008-00003/Set 3	SB5-14	MgO (wt%)	0.4506	0.4591	0.4670	-0.0164	-0.0079	-3.5%	-1.7%
SRNL-SCS-2008-00003/Set 3	SB5-14	MnO (wt%)	2.4436	2.3023	2.3160	0.1276	-0.0137	5.5%	-0.6%
SRNL-SCS-2008-00003/Set 3	SB5-14	Na2O (wt%)	14.4742	14.2146	14.6780	-0.2039	-0.4634	-1.4%	-3.2%
SRNL-SCS-2008-00003/Set 3	SB5-14	Nb2O5 (wt%)	0.0300	0.0300	0.0000	0.0300	0.0300		
SRNL-SCS-2008-00003/Set 3	SB5-14	NiO (wt%)	1.0240	1.0710	1.1980	-0.1740	-0.1270	-14.5%	-10.6%
SRNL-SCS-2008-00003/Set 3	SB5-14	PbO (wt%)	0.0385	0.0385	0.0360	0.0025	0.0025	7.0%	7.0%
SRNL-SCS-2008-00003/Set 3	SB5-14	SiO2 (wt%)	46.5298	44.8536	45.9580	0.5718	-1.1044	1.2%	-2.4%
SRNL-SCS-2008-00003/Set 3	SB5-14	SO4 (wt%)	0.5093	0.5093	0.5470	-0.0377	-0.0377	-6.9%	-6.9%
SRNL-SCS-2008-00003/Set 3	SB5-14	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-14	TiO2 (wt%)	0.3311	0.3405	0.3500	-0.0189	-0.0095	-5.4%	-2.7%
SRNL-SCS-2008-00003/Set 3	SB5-14	U3O8 (wt%)	2.8831	2.8463	2.9250	-0.0419	-0.0787	-1.4%	-2.7%
SRNL-SCS-2008-00003/Set 3	SB5-14	ZnO (wt%)	0.0405	0.0405	0.0420	-0.0015	-0.0015	-3.7%	-3.7%
SRNL-SCS-2008-00003/Set 3	SB5-14	ZrO2 (wt%)	0.1084	0.1084	0.1170	-0.0086	-0.0086	-7.3%	-7.3%
SRNL-SCS-2008-00003/Set 3	SB5-14	Sum	100.6829	98.4686	99.9960	0.6869	-1.5274	0.7%	-1.5%
SRNL-SCS-2008-00003/Set 3	SB5-15	Al2O3 (wt%)	7.1895	7.3785	7.2170	-0.0275	0.1615	-0.4%	2.2%
SRNL-SCS-2008-00003/Set 3	SB5-15	B2O3 (wt%)	8.3878	8.5496	8.6800	-0.2922	-0.1304	-3.4%	-1.5%
SRNL-SCS-2008-00003/Set 3	SB5-15	BaO (wt%)	0.0578	0.0618	0.0630	-0.0052	-0.0012	-8.3%	-1.9%
SRNL-SCS-2008-00003/Set 3	SB5-15	CaO (wt%)	2.1688	2.2556	2.0960	0.0728	0.1596	3.5%	7.6%
SRNL-SCS-2008-00003/Set 3	SB5-15	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	SB5-15	Ce2O3 (wt%)	0.0878	0.0878	0.1010	-0.0132	-0.0132	-13.0%	-13.0%
SRNL-SCS-2008-00003/Set 3	SB5-15	Cr2O3 (wt%)	0.0928	0.0935	0.0930	-0.0002	0.0005	-0.2%	0.5%
SRNL-SCS-2008-00003/Set 3	SB5-15	CuO (wt%)	0.0329	0.0346	0.0330	-0.0001	0.0016	-0.4%	5.0%
SRNL-SCS-2008-00003/Set 3	SB5-15	Fe2O3 (wt%)	10.1509	10.1126	10.5040	-0.3531	-0.3914	-3.4%	-3.7%
SRNL-SCS-2008-00003/Set 3	SB5-15	K2O (wt%)	0.0705	0.0755	0.0770	-0.0065	-0.0015	-8.5%	-1.9%
SRNL-SCS-2008-00003/Set 3	SB5-15	La2O3 (wt%)	0.0586	0.0586	0.0180	0.0406	0.0406	225.8%	225.8%
SRNL-SCS-2008-00003/Set 3	SB5-15	Li2O (wt%)	3.6276	3.7502	3.7200	-0.0924	0.0302	-2.5%	0.8%
SRNL-SCS-2008-00003/Set 3	SB5-15	MgO (wt%)	0.4689	0.4850	0.4670	0.0019	0.0180	0.4%	3.8%
SRNL-SCS-2008-00003/Set 3	SB5-15	MnO (wt%)	2.3080	2.2711	2.3160	-0.0080	-0.0449	-0.3%	-1.9%
SRNL-SCS-2008-00003/Set 3	SB5-15	Na2O (wt%)	14.6056	14.6759	14.6780	-0.0724	-0.0021	-0.5%	0.0%
SRNL-SCS-2008-00003/Set 3	SB5-15	Nb2O5 (wt%)	0.0418	0.0418	0.0000	0.0418	0.0418		
SRNL-SCS-2008-00003/Set 3	SB5-15	NiO (wt%)	1.0864	1.1518	1.1980	-0.1116	-0.0462	-9.3%	-3.9%
SRNL-SCS-2008-00003/Set 3	SB5-15	PbO (wt%)	0.0380	0.0380	0.0360	0.0020	0.0020	5.5%	5.5%
SRNL-SCS-2008-00003/Set 3	SB5-15	SiO2 (wt%)	44.2835	43.9970	44.7180	-0.4345	-0.7210	-1.0%	-1.6%
SRNL-SCS-2008-00003/Set 3	SB5-15	SO4 (wt%)	0.5123	0.5123	0.5470	-0.0347	-0.0347	-6.3%	-6.3%
SRNL-SCS-2008-00003/Set 3	SB5-15	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-15	TiO2 (wt%)	0.3653	0.3798	0.3500	0.0153	0.0298	4.4%	8.5%
SRNL-SCS-2008-00003/Set 3	SB5-15	U3O8 (wt%)	2.8655	2.9233	2.9250	-0.0595	-0.0017	-2.0%	-0.1%
SRNL-SCS-2008-00003/Set 3	SB5-15	ZnO (wt%)	0.0411	0.0411	0.0420	-0.0009	-0.0009	-2.2%	-2.2%
SRNL-SCS-2008-00003/Set 3	SB5-15	ZrO2 (wt%)	0.1131	0.1131	0.1170	-0.0039	-0.0039	-3.3%	-3.3%
SRNL-SCS-2008-00003/Set 3	SB5-15	Sum	98.7171	99.1513	99.9960	-1.2789	-0.8447	-1.3%	-0.8%
SRNL-SCS-2008-00003/Set 3	SB5-16	Al2O3 (wt%)	7.2179	7.4077	7.2170	0.0009	0.1907	0.0%	2.6%
SRNL-SCS-2008-00003/Set 3	SB5-16	B2O3 (wt%)	9.6114	9.7947	9.9200	-0.3086	-0.1253	-3.1%	-1.3%
SRNL-SCS-2008-00003/Set 3	SB5-16	BaO (wt%)	0.0575	0.0615	0.0630	-0.0055	-0.0015	-8.7%	-2.4%
SRNL-SCS-2008-00003/Set 3	SB5-16	CaO (wt%)	0.8206	0.8535	0.8560	-0.0354	-0.0025	-4.1%	-0.3%
SRNL-SCS-2008-00003/Set 3	SB5-16	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	SB5-16	Ce2O3 (wt%)	0.1300	0.1300	0.1010	0.0290	0.0290	28.7%	28.7%
SRNL-SCS-2008-00003/Set 3	SB5-16	Cr2O3 (wt%)	0.0855	0.0861	0.0930	-0.0075	-0.0069	-8.1%	-7.4%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 3	SB5-16	CuO (wt%)	0.0341	0.0360	0.0330	0.0011	0.0030	3.4%	9.0%
SRNL-SCS-2008-00003/Set 3	SB5-16	Fe2O3 (wt%)	10.5905	10.5467	10.5040	0.0865	0.0427	0.8%	0.4%
SRNL-SCS-2008-00003/Set 3	SB5-16	K2O (wt%)	0.0690	0.0739	0.0770	-0.0080	-0.0031	-10.4%	-4.0%
SRNL-SCS-2008-00003/Set 3	SB5-16	La2O3 (wt%)	0.0586	0.0586	0.0180	0.0406	0.0406	225.8%	225.8%
SRNL-SCS-2008-00003/Set 3	SB5-16	Li2O (wt%)	3.0464	3.1493	3.1000	-0.0536	0.0493	-1.7%	1.6%
SRNL-SCS-2008-00003/Set 3	SB5-16	MgO (wt%)	0.4780	0.4944	0.4670	0.0110	0.0274	2.4%	5.9%
SRNL-SCS-2008-00003/Set 3	SB5-16	MnO (wt%)	2.3726	2.3310	2.3160	0.0566	0.0150	2.4%	0.6%
SRNL-SCS-2008-00003/Set 3	SB5-16	Na2O (wt%)	14.9224	14.9945	15.2980	-0.3756	-0.3035	-2.5%	-2.0%
SRNL-SCS-2008-00003/Set 3	SB5-16	Nb2O5 (wt%)	0.0390	0.0390	0.0000	0.0390	0.0390		
SRNL-SCS-2008-00003/Set 3	SB5-16	NiO (wt%)	1.1039	1.1703	1.1980	-0.0941	-0.0277	-7.9%	-2.3%
SRNL-SCS-2008-00003/Set 3	SB5-16	PbO (wt%)	0.0390	0.0390	0.0360	0.0030	0.0030	8.5%	8.5%
SRNL-SCS-2008-00003/Set 3	SB5-16	SiO2 (wt%)	44.3370	44.0419	44.7180	-0.3810	-0.6761	-0.9%	-1.5%
SRNL-SCS-2008-00003/Set 3	SB5-16	SO4 (wt%)	0.5063	0.5063	0.5470	-0.0407	-0.0407	-7.4%	-7.4%
SRNL-SCS-2008-00003/Set 3	SB5-16	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-16	TiO2 (wt%)	0.3494	0.3634	0.3500	-0.0006	0.0134	-0.2%	3.8%
SRNL-SCS-2008-00003/Set 3	SB5-16	U3O8 (wt%)	2.8684	2.9263	2.9250	-0.0566	0.0013	-1.9%	0.0%
SRNL-SCS-2008-00003/Set 3	SB5-16	ZnO (wt%)	0.0423	0.0423	0.0420	0.0003	0.0003	0.8%	0.8%
SRNL-SCS-2008-00003/Set 3	SB5-16	ZrO2 (wt%)	0.1135	0.1135	0.1170	-0.0035	-0.0035	-3.0%	-3.0%
SRNL-SCS-2008-00003/Set 3	SB5-16	Sum	98.9559	99.3225	99.9960	-1.0401	-0.6735	-1.0%	-0.7%
SRNL-SCS-2008-00003/Set 3	SB5-17	Al2O3 (wt%)	10.9922	11.2811	11.0090	-0.0168	0.2721	-0.2%	2.5%
SRNL-SCS-2008-00003/Set 3	SB5-17	B2O3 (wt%)	9.5229	9.2711	9.3000	0.2229	-0.0289	2.4%	-0.3%
SRNL-SCS-2008-00003/Set 3	SB5-17	BaO (wt%)	0.0360	0.0385	0.0390	-0.0030	-0.0005	-7.7%	-1.3%
SRNL-SCS-2008-00003/Set 3	SB5-17	CaO (wt%)	0.6583	0.6847	0.6770	-0.0187	0.0077	-2.8%	1.1%
SRNL-SCS-2008-00003/Set 3	SB5-17	CdO (wt%)	0.0148	0.0148	0.0230	-0.0082	-0.0082	-35.4%	-35.4%
SRNL-SCS-2008-00003/Set 3	SB5-17	Ce2O3 (wt%)	0.1646	0.1646	0.1410	0.0236	0.0236	16.7%	16.7%
SRNL-SCS-2008-00003/Set 3	SB5-17	Cr2O3 (wt%)	0.1118	0.1126	0.1420	-0.0302	-0.0294	-21.3%	-20.7%
SRNL-SCS-2008-00003/Set 3	SB5-17	CuO (wt%)	0.0063	0.0066	0.0050	0.0013	0.0016	25.2%	32.0%
SRNL-SCS-2008-00003/Set 3	SB5-17	Fe2O3 (wt%)	8.3530	8.3283	8.8340	-0.4810	-0.5057	-5.4%	-5.7%
SRNL-SCS-2008-00003/Set 3	SB5-17	K2O (wt%)	0.0145	0.0155	0.0250	-0.0105	-0.0095	-42.2%	-38.0%
SRNL-SCS-2008-00003/Set 3	SB5-17	La2O3 (wt%)	0.0586	0.0586	0.0620	-0.0034	-0.0034	-5.4%	-5.4%
SRNL-SCS-2008-00003/Set 3	SB5-17	Li2O (wt%)	5.5276	5.6668	5.5800	-0.0524	0.0868	-0.9%	1.6%
SRNL-SCS-2008-00003/Set 3	SB5-17	MgO (wt%)	0.4502	0.4657	0.4470	0.0032	0.0187	0.7%	4.2%
SRNL-SCS-2008-00003/Set 3	SB5-17	MnO (wt%)	1.8593	1.8306	1.8470	0.0123	-0.0164	0.7%	-0.9%
SRNL-SCS-2008-00003/Set 3	SB5-17	Na2O (wt%)	12.0376	12.0965	11.9160	0.1216	0.1805	1.0%	1.5%
SRNL-SCS-2008-00003/Set 3	SB5-17	Nb2O5 (wt%)	0.0143	0.0143	0.0000	0.0143	0.0143		
SRNL-SCS-2008-00003/Set 3	SB5-17	NiO (wt%)	0.9254	0.9811	1.0370	-0.1116	-0.0559	-10.8%	-5.4%
SRNL-SCS-2008-00003/Set 3	SB5-17	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00003/Set 3	SB5-17	SiO2 (wt%)	45.0323	44.7499	45.3570	-0.3247	-0.6071	-0.7%	-1.3%
SRNL-SCS-2008-00003/Set 3	SB5-17	SO4 (wt%)	0.1498	0.1498	0.2770	-0.1272	-0.1272	-45.9%	-45.9%
SRNL-SCS-2008-00003/Set 3	SB5-17	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-17	TiO2 (wt%)	0.0083	0.0087	0.0100	-0.0017	-0.0013	-16.6%	-13.3%
SRNL-SCS-2008-00003/Set 3	SB5-17	U3O8 (wt%)	2.7859	2.8421	2.8260	-0.0401	0.0161	-1.4%	0.6%
SRNL-SCS-2008-00003/Set 3	SB5-17	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 3	SB5-17	ZrO2 (wt%)	0.0929	0.0929	0.0980	-0.0051	-0.0051	-5.2%	-5.2%
SRNL-SCS-2008-00003/Set 3	SB5-17	Sum	98.8905	98.9488	99.6660	-0.7755	-0.7172	-0.8%	-0.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	Al2O3 (wt%)	9.8065	9.8033	9.4600	0.3465	0.3433	3.7%	3.6%
SRNL-SCS-2008-00003/Set 3	SB5-18	B2O3 (wt%)	8.7581	8.5296	8.6800	0.0781	-0.1504	0.9%	-1.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	BaO (wt%)	0.0391	0.0412	0.0430	-0.0039	-0.0018	-9.1%	-4.2%
SRNL-SCS-2008-00003/Set 3	SB5-18	CaO (wt%)	0.7230	0.7471	0.7470	-0.0240	0.0001	-3.2%	0.0%
SRNL-SCS-2008-00003/Set 3	SB5-18	CdO (wt%)	0.0180	0.0180	0.0250	-0.0070	-0.0070	-28.0%	-28.0%
SRNL-SCS-2008-00003/Set 3	SB5-18	Ce2O3 (wt%)	0.1329	0.1329	0.1550	-0.0221	-0.0221	-14.2%	-14.2%
SRNL-SCS-2008-00003/Set 3	SB5-18	Cr2O3 (wt%)	0.1279	0.1260	0.1560	-0.0281	-0.0300	-18.0%	-19.3%
SRNL-SCS-2008-00003/Set 3	SB5-18	CuO (wt%)	0.0078	0.0082	0.0050	0.0028	0.0032	56.5%	63.4%
SRNL-SCS-2008-00003/Set 3	SB5-18	Fe2O3 (wt%)	10.2009	9.7043	9.7450	0.4559	-0.0407	4.7%	-0.4%
SRNL-SCS-2008-00003/Set 3	SB5-18	K2O (wt%)	0.0214	0.0230	0.0270	-0.0056	-0.0040	-20.8%	-14.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	La2O3 (wt%)	0.0586	0.0586	0.0680	-0.0094	-0.0094	-13.8%	-13.8%
SRNL-SCS-2008-00003/Set 3	SB5-18	Li2O (wt%)	4.3112	4.4198	4.3400	-0.0288	0.0798	-0.7%	1.8%
SRNL-SCS-2008-00003/Set 3	SB5-18	MgO (wt%)	0.4859	0.4950	0.4940	-0.0081	0.0010	-1.6%	0.2%
SRNL-SCS-2008-00003/Set 3	SB5-18	MnO (wt%)	2.2757	2.1452	2.0380	0.2377	0.1072	11.7%	5.3%
SRNL-SCS-2008-00003/Set 3	SB5-18	Na2O (wt%)	14.2922	14.0310	14.1540	0.1382	-0.1230	1.0%	-0.9%
SRNL-SCS-2008-00003/Set 3	SB5-18	Nb2O5 (wt%)	0.0143	0.0143	0.0000	0.0143	0.0143		
SRNL-SCS-2008-00003/Set 3	SB5-18	NiO (wt%)	0.9970	1.0427	1.1440	-0.1470	-0.1013	-12.8%	-8.9%
SRNL-SCS-2008-00003/Set 3	SB5-18	PbO (wt%)	0.0108	0.0108	0.0090	0.0018	0.0018	19.7%	19.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	SiO2 (wt%)	46.2089	44.5501	44.8110	1.3979	-0.2609	3.1%	-0.6%
SRNL-SCS-2008-00003/Set 3	SB5-18	SO4 (wt%)	0.2674	0.2674	0.2890	-0.0216	-0.0216	-7.5%	-7.5%
SRNL-SCS-2008-00003/Set 3	SB5-18	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-18	TiO2 (wt%)	0.0217	0.0223	0.0110	0.0107	0.0113	97.1%	102.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	U3O8 (wt%)	3.1897	3.1488	3.1170	0.0727	0.0318	2.3%	1.0%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 3	SB5-18	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	ZrO2 (wt%)	0.0986	0.0986	0.1080	-0.0094	-0.0094	-8.7%	-8.7%
SRNL-SCS-2008-00003/Set 3	SB5-18	Sum	102.1308	99.5013	99.6320	2.4988	-0.1307	2.5%	-0.1%
SRNL-SCS-2008-00003/Set 3	SB5-19	Al2O3 (wt%)	7.9690	8.1784	7.9470	0.0220	0.2314	0.3%	2.9%
SRNL-SCS-2008-00003/Set 3	SB5-19	B2O3 (wt%)	9.2492	9.0050	9.3000	-0.0508	-0.2950	-0.5%	-3.2%
SRNL-SCS-2008-00003/Set 3	SB5-19	BaO (wt%)	0.0354	0.0379	0.0460	-0.0106	-0.0081	-22.9%	-17.6%
SRNL-SCS-2008-00003/Set 3	SB5-19	CaO (wt%)	0.7724	0.8033	0.8010	-0.0286	0.0023	-3.6%	0.3%
SRNL-SCS-2008-00003/Set 3	SB5-19	CdO (wt%)	0.0211	0.0211	0.0270	-0.0059	-0.0059	-21.7%	-21.7%
SRNL-SCS-2008-00003/Set 3	SB5-19	Ce2O3 (wt%)	0.1818	0.1818	0.1670	0.0148	0.0148	8.9%	8.9%
SRNL-SCS-2008-00003/Set 3	SB5-19	Cr2O3 (wt%)	0.1410	0.1421	0.1670	-0.0260	-0.0249	-15.5%	-14.9%
SRNL-SCS-2008-00003/Set 3	SB5-19	CuO (wt%)	0.0063	0.0066	0.0050	0.0013	0.0016	25.2%	32.0%
SRNL-SCS-2008-00003/Set 3	SB5-19	Fe2O3 (wt%)	10.4225	10.3705	10.4470	-0.0245	-0.0765	-0.2%	-0.7%
SRNL-SCS-2008-00003/Set 3	SB5-19	K2O (wt%)	0.0175	0.0187	0.0300	-0.0125	-0.0113	-41.8%	-37.6%
SRNL-SCS-2008-00003/Set 3	SB5-19	La2O3 (wt%)	0.0586	0.0586	0.0730	-0.0144	-0.0144	-19.7%	-19.7%
SRNL-SCS-2008-00003/Set 3	SB5-19	Li2O (wt%)	3.0679	3.1452	3.1000	-0.0321	0.0452	-1.0%	1.5%
SRNL-SCS-2008-00003/Set 3	SB5-19	MgO (wt%)	0.5224	0.5403	0.5290	-0.0066	0.0113	-1.3%	2.1%
SRNL-SCS-2008-00003/Set 3	SB5-19	MnO (wt%)	2.2951	2.2559	2.1840	0.1111	0.0719	5.1%	3.3%
SRNL-SCS-2008-00003/Set 3	SB5-19	Na2O (wt%)	15.1684	15.2405	15.5100	-0.3416	-0.2695	-2.2%	-1.7%
SRNL-SCS-2008-00003/Set 3	SB5-19	Nb2O5 (wt%)	0.0139	0.0139	0.0000	0.0139	0.0139		
SRNL-SCS-2008-00003/Set 3	SB5-19	NiO (wt%)	1.0959	1.1619	1.2270	-0.1311	-0.0651	-10.7%	-5.3%
SRNL-SCS-2008-00003/Set 3	SB5-19	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00003/Set 3	SB5-19	SiO2 (wt%)	44.1231	43.8354	44.2490	-0.1259	-0.4136	-0.3%	-0.9%
SRNL-SCS-2008-00003/Set 3	SB5-19	SO4 (wt%)	0.3108	0.3108	0.3100	0.0008	0.0008	0.3%	0.3%
SRNL-SCS-2008-00003/Set 3	SB5-19	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-19	TiO2 (wt%)	0.0200	0.0208	0.0120	0.0080	0.0088	66.8%	73.4%
SRNL-SCS-2008-00003/Set 3	SB5-19	U3O8 (wt%)	3.3018	3.3684	3.3420	-0.0402	0.0264	-1.2%	0.8%
SRNL-SCS-2008-00003/Set 3	SB5-19	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00003/Set 3	SB5-19	ZrO2 (wt%)	0.1040	0.1040	0.1160	-0.0120	-0.0120	-10.3%	-10.3%
SRNL-SCS-2008-00003/Set 3	SB5-19	Sum	98.9720	98.8951	99.6060	-0.6340	-0.7109	-0.6%	-0.7%
SRNL-SCS-2008-00003/Set 3	SB5-20	Al2O3 (wt%)	7.4210	7.4198	7.2170	0.2040	0.2028	2.8%	2.8%
SRNL-SCS-2008-00003/Set 3	SB5-20	B2O3 (wt%)	9.6838	9.8695	9.9200	-0.2362	-0.0505	-2.4%	-0.5%
SRNL-SCS-2008-00003/Set 3	SB5-20	BaO (wt%)	0.0581	0.0612	0.0630	-0.0049	-0.0018	-7.8%	-2.9%
SRNL-SCS-2008-00003/Set 3	SB5-20	CaO (wt%)	0.8427	0.8711	0.8560	-0.0133	0.0151	-1.6%	1.8%
SRNL-SCS-2008-00003/Set 3	SB5-20	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	SB5-20	Ce2O3 (wt%)	0.1268	0.1268	0.1010	0.0258	0.0258	25.5%	25.5%
SRNL-SCS-2008-00003/Set 3	SB5-20	Cr2O3 (wt%)	0.0877	0.0864	0.0930	-0.0053	-0.0066	-5.7%	-7.1%
SRNL-SCS-2008-00003/Set 3	SB5-20	CuO (wt%)	0.0354	0.0369	0.0330	0.0024	0.0039	7.2%	11.7%
SRNL-SCS-2008-00003/Set 3	SB5-20	Fe2O3 (wt%)	11.1374	10.5949	10.5040	0.6334	0.0909	6.0%	0.9%
SRNL-SCS-2008-00003/Set 3	SB5-20	K2O (wt%)	0.0810	0.0873	0.0770	0.0040	0.0103	5.2%	13.4%
SRNL-SCS-2008-00003/Set 3	SB5-20	La2O3 (wt%)	0.0586	0.0586	0.0180	0.0406	0.0406	225.8%	225.8%
SRNL-SCS-2008-00003/Set 3	SB5-20	Li2O (wt%)	2.5027	2.5873	2.4800	0.0227	0.1073	0.9%	4.3%
SRNL-SCS-2008-00003/Set 3	SB5-20	MgO (wt%)	0.4788	0.4878	0.4670	0.0118	0.0208	2.5%	4.4%
SRNL-SCS-2008-00003/Set 3	SB5-20	MnO (wt%)	2.5792	2.4313	2.3160	0.2632	0.1153	11.4%	5.0%
SRNL-SCS-2008-00003/Set 3	SB5-20	Na2O (wt%)	14.5517	14.2906	14.6780	-0.1263	-0.3874	-0.9%	-2.6%
SRNL-SCS-2008-00003/Set 3	SB5-20	Nb2O5 (wt%)	0.0286	0.0286	0.0000	0.0286	0.0286		
SRNL-SCS-2008-00003/Set 3	SB5-20	NiO (wt%)	1.0877	1.1375	1.1980	-0.1103	-0.0605	-9.2%	-5.1%
SRNL-SCS-2008-00003/Set 3	SB5-20	PbO (wt%)	0.0366	0.0366	0.0360	0.0006	0.0006	1.7%	1.7%
SRNL-SCS-2008-00003/Set 3	SB5-20	SiO2 (wt%)	47.7064	46.0001	45.9580	1.7484	0.0421	3.8%	0.1%
SRNL-SCS-2008-00003/Set 3	SB5-20	SO4 (wt%)	0.5190	0.5190	0.5470	-0.0280	-0.0280	-5.1%	-5.1%
SRNL-SCS-2008-00003/Set 3	SB5-20	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	SB5-20	TiO2 (wt%)	0.3349	0.3444	0.3500	-0.0151	-0.0056	-4.3%	-1.6%
SRNL-SCS-2008-00003/Set 3	SB5-20	U3O8 (wt%)	2.9568	2.9194	2.9250	0.0318	-0.0056	1.1%	-0.2%
SRNL-SCS-2008-00003/Set 3	SB5-20	ZnO (wt%)	0.0414	0.0414	0.0420	-0.0006	-0.0006	-1.5%	-1.5%
SRNL-SCS-2008-00003/Set 3	SB5-20	ZrO2 (wt%)	0.1064	0.1064	0.1170	-0.0106	-0.0106	-9.1%	-9.1%
SRNL-SCS-2008-00003/Set 3	SB5-20	Sum	102.5253	100.2056	99.9960	2.5293	0.2096	2.5%	0.2%
SRNL-SCS-2008-00003/Set 3	U std	Al2O3 (wt%)	3.9805	4.0317	4.1000	-0.1195	-0.0683	-2.9%	-1.7%
SRNL-SCS-2008-00003/Set 3	U std	B2O3 (wt%)	9.0077	8.9709	9.2090	-0.2013	-0.2381	-2.2%	-2.6%
SRNL-SCS-2008-00003/Set 3	U std	BaO (wt%)	0.0056	0.0059	0.0000	0.0056	0.0059		
SRNL-SCS-2008-00003/Set 3	U std	CaO (wt%)	1.2474	1.2935	1.3010	-0.0536	-0.0075	-4.1%	-0.6%
SRNL-SCS-2008-00003/Set 3	U std	CdO (wt%)	0.0057	0.0057	0.0000	0.0057	0.0057		
SRNL-SCS-2008-00003/Set 3	U std	Ce2O3 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00003/Set 3	U std	Cr2O3 (wt%)	0.2324	0.2315	0.0000	0.2324	0.2315		
SRNL-SCS-2008-00003/Set 3	U std	CuO (wt%)	0.0063	0.0066	0.0000	0.0063	0.0066		
SRNL-SCS-2008-00003/Set 3	U std	Fe2O3 (wt%)	13.5559	13.1797	13.1960	0.3599	-0.0163	2.7%	-0.1%
SRNL-SCS-2008-00003/Set 3	U std	K2O (wt%)	2.8748	3.0897	2.9990	-0.1242	0.0907	-4.1%	3.0%
SRNL-SCS-2008-00003/Set 3	U std	La2O3 (wt%)	0.0586	0.0586	0.0000	0.0586	0.0586		
SRNL-SCS-2008-00003/Set 3	U std	Li2O (wt%)	2.9889	3.0770	3.0570	-0.0681	0.0200	-2.2%	0.7%
SRNL-SCS-2008-00003/Set 3	U std	MgO (wt%)	1.1536	1.1841	1.2100	-0.0564	-0.0259	-4.7%	-2.1%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00003/Set 3	U std	MnO (wt%)	2.9192	2.8081	2.8920	0.0272	-0.0839	0.9%	-2.9%
SRNL-SCS-2008-00003/Set 3	U std	Na2O (wt%)	11.7759	11.6960	11.7950	-0.0191	-0.0990	-0.2%	-0.8%
SRNL-SCS-2008-00003/Set 3	U std	Nb2O5 (wt%)	0.0728	0.0728	0.0000	0.0728	0.0728		
SRNL-SCS-2008-00003/Set 3	U std	NiO (wt%)	0.9914	1.0439	1.1200	-0.1286	-0.0761	-11.5%	-6.8%
SRNL-SCS-2008-00003/Set 3	U std	PbO (wt%)	0.0108	0.0108	0.0000	0.0108	0.0108		
SRNL-SCS-2008-00003/Set 3	U std	SiO2 (wt%)	46.0306	45.0456	45.3530	0.6776	-0.3074	1.5%	-0.7%
SRNL-SCS-2008-00003/Set 3	U std	SO4 (wt%)	0.1498	0.1498	0.0000	0.1498	0.1498		
SRNL-SCS-2008-00003/Set 3	U std	ThO2 (wt%)	0.0569	0.0569	0.0000	0.0569	0.0569		
SRNL-SCS-2008-00003/Set 3	U std	TiO2 (wt%)	0.9238	0.9553	1.0490	-0.1252	-0.0937	-11.9%	-8.9%
SRNL-SCS-2008-00003/Set 3	U std	U3O8 (wt%)	2.3977	2.4060	2.4060	-0.0083	0.0000	-0.3%	0.0%
SRNL-SCS-2008-00003/Set 3	U std	ZnO (wt%)	0.0062	0.0062	0.0000	0.0062	0.0062		
SRNL-SCS-2008-00003/Set 3	U std	ZrO2 (wt%)	0.0068	0.0068	0.0000	0.0068	0.0068		
SRNL-SCS-2008-00003/Set 3	U std	Sum	100.4652	99.3990	99.6870	0.7782	-0.2880	0.8%	-0.3%
SRNL-SCS-2008-00043/Set 1	Batch 1	Al2O3 (wt%)	4.7363	4.8130	4.8770	-0.1407	-0.0640	-2.9%	-1.3%
SRNL-SCS-2008-00043/Set 1	Batch 1	B2O3 (wt%)	7.9156	7.7770	7.7770	0.1386	0.0000	1.8%	0.0%
SRNL-SCS-2008-00043/Set 1	Batch 1	BaO (wt%)	0.1349	0.1449	0.1510	-0.0161	-0.0061	-10.7%	-4.0%
SRNL-SCS-2008-00043/Set 1	Batch 1	CaO (wt%)	1.2604	1.2392	1.2200	0.0404	0.0192	3.3%	1.6%
SRNL-SCS-2008-00043/Set 1	Batch 1	Ce2O3 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00043/Set 1	Batch 1	Cr2O3 (wt%)	0.1086	0.1095	0.1070	0.0016	0.0025	1.5%	2.4%
SRNL-SCS-2008-00043/Set 1	Batch 1	Fe2O3 (wt%)	12.6528	12.9151	12.8390	-0.1862	0.0761	-1.4%	0.6%
SRNL-SCS-2008-00043/Set 1	Batch 1	HfO2 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00043/Set 1	Batch 1	K2O (wt%)	3.1460	3.2255	3.3270	-0.1810	-0.1015	-5.4%	-3.1%
SRNL-SCS-2008-00043/Set 1	Batch 1	La2O3 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00043/Set 1	Batch 1	Li2O (wt%)	4.4170	4.4290	4.4290	-0.0120	0.0000	-0.3%	0.0%
SRNL-SCS-2008-00043/Set 1	Batch 1	MgO (wt%)	1.3510	1.4016	1.4190	-0.0680	-0.0174	-4.8%	-1.2%
SRNL-SCS-2008-00043/Set 1	Batch 1	MnO (wt%)	1.7345	1.7496	1.7260	0.0085	0.0236	0.5%	1.4%
SRNL-SCS-2008-00043/Set 1	Batch 1	Na2O (wt%)	9.1619	8.9477	9.0030	0.1589	-0.0553	1.8%	-0.6%
SRNL-SCS-2008-00043/Set 1	Batch 1	Nd2O3 (wt%)	0.1211	0.1345	0.1470	-0.0259	-0.0125	-17.6%	-8.5%
SRNL-SCS-2008-00043/Set 1	Batch 1	NiO (wt%)	0.5758	0.6678	0.7510	-0.1752	-0.0832	-23.3%	-11.1%
SRNL-SCS-2008-00043/Set 1	Batch 1	PbO (wt%)	0.0108	0.0108	0.0000	0.0108	0.0108		
SRNL-SCS-2008-00043/Set 1	Batch 1	SiO2 (wt%)	50.7371	50.8529	50.2200	0.5171	0.6329	1.0%	1.3%
SRNL-SCS-2008-00043/Set 1	Batch 1	SO4 (wt%)	0.0749	0.0749	0.0000	0.0749	0.0749		
SRNL-SCS-2008-00043/Set 1	Batch 1	TiO2 (wt%)	0.6174	0.6521	0.6770	-0.0596	-0.0249	-8.8%	-3.7%
SRNL-SCS-2008-00043/Set 1	Batch 1	ZnO (wt%)	0.0062	0.0062	0.0000	0.0062	0.0062		
SRNL-SCS-2008-00043/Set 1	Batch 1	ZrO2 (wt%)	0.0833	0.0833	0.0980	-0.0147	-0.0147	-15.0%	-15.0%
SRNL-SCS-2008-00043/Set 1	Batch 1	Sum	98.8634	99.2521	98.7680	0.0954	0.4841	0.1%	0.5%
SRNL-SCS-2008-00043/Set 1	SB5-21	Al2O3 (wt%)	11.3370	11.5195	11.0090	0.3280	0.5105	3.0%	4.6%
SRNL-SCS-2008-00043/Set 1	SB5-21	B2O3 (wt%)	8.9835	8.8263	8.6800	0.3035	0.1463	3.5%	1.7%
SRNL-SCS-2008-00043/Set 1	SB5-21	BaO (wt%)	0.0304	0.0327	0.0390	-0.0086	-0.0063	-22.0%	-16.2%
SRNL-SCS-2008-00043/Set 1	SB5-21	CaO (wt%)	1.9939	1.9603	1.9170	0.0769	0.0433	4.0%	2.3%
SRNL-SCS-2008-00043/Set 1	SB5-21	Ce2O3 (wt%)	0.1693	0.1693	0.1410	0.0283	0.0283	20.0%	20.0%
SRNL-SCS-2008-00043/Set 1	SB5-21	Cr2O3 (wt%)	0.1283	0.1293	0.1420	-0.0137	-0.0127	-9.7%	-8.9%
SRNL-SCS-2008-00043/Set 1	SB5-21	Fe2O3 (wt%)	8.7426	8.9244	8.8340	-0.0914	0.0904	-1.0%	1.0%
SRNL-SCS-2008-00043/Set 1	SB5-21	HfO2 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00043/Set 1	SB5-21	K2O (wt%)	0.0602	0.0617	0.0250	0.0352	0.0367	140.9%	147.0%
SRNL-SCS-2008-00043/Set 1	SB5-21	La2O3 (wt%)	0.0625	0.0625	0.0620	0.0005	0.0005	0.7%	0.7%
SRNL-SCS-2008-00043/Set 1	SB5-21	Li2O (wt%)	3.7191	3.7292	3.7200	-0.0009	0.0092	0.0%	0.2%
SRNL-SCS-2008-00043/Set 1	SB5-21	MgO (wt%)	0.4743	0.4921	0.4470	0.0273	0.0451	6.1%	10.1%
SRNL-SCS-2008-00043/Set 1	SB5-21	MnO (wt%)	1.9013	1.9179	1.8470	0.0543	0.0709	2.9%	3.8%
SRNL-SCS-2008-00043/Set 1	SB5-21	Na2O (wt%)	13.7833	13.4710	13.7760	0.0073	-0.3050	0.1%	-2.2%
SRNL-SCS-2008-00043/Set 1	SB5-21	Nd2O3 (wt%)	2.8023	3.1133	2.8260	-0.0237	0.2873	-0.8%	10.2%
SRNL-SCS-2008-00043/Set 1	SB5-21	NiO (wt%)	0.9617	1.1163	1.0370	-0.0753	0.0793	-7.3%	7.6%
SRNL-SCS-2008-00043/Set 1	SB5-21	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00043/Set 1	SB5-21	SiO2 (wt%)	45.1392	45.2424	44.7370	0.4022	0.5054	0.9%	1.1%
SRNL-SCS-2008-00043/Set 1	SB5-21	SO4 (wt%)	0.2839	0.2839	0.2770	0.0069	0.0069	2.5%	2.5%
SRNL-SCS-2008-00043/Set 1	SB5-21	TiO2 (wt%)	0.0083	0.0088	0.0100	-0.0017	-0.0012	-16.6%	-11.8%
SRNL-SCS-2008-00043/Set 1	SB5-21	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00043/Set 1	SB5-21	ZrO2 (wt%)	0.0925	0.0925	0.0980	-0.0055	-0.0055	-5.6%	-5.6%
SRNL-SCS-2008-00043/Set 1	SB5-21	Sum	100.6964	101.1761	99.6380	1.0584	1.5381	1.1%	1.5%
SRNL-SCS-2008-00043/Set 1	SB5-22	Al2O3 (wt%)	9.5703	9.7249	9.4600	0.1103	0.2649	1.2%	2.8%
SRNL-SCS-2008-00043/Set 1	SB5-22	B2O3 (wt%)	10.0139	9.8386	9.9200	0.0939	-0.0814	0.9%	-0.8%
SRNL-SCS-2008-00043/Set 1	SB5-22	BaO (wt%)	0.0341	0.0367	0.0430	-0.0089	-0.0063	-20.8%	-14.8%
SRNL-SCS-2008-00043/Set 1	SB5-22	CaO (wt%)	0.8080	0.7943	0.7470	0.0610	0.0473	8.2%	6.3%
SRNL-SCS-2008-00043/Set 1	SB5-22	Ce2O3 (wt%)	0.1780	0.1780	0.1550	0.0230	0.0230	14.9%	14.9%
SRNL-SCS-2008-00043/Set 1	SB5-22	Cr2O3 (wt%)	0.1275	0.1285	0.1560	-0.0285	-0.0275	-18.3%	-17.6%
SRNL-SCS-2008-00043/Set 1	SB5-22	Fe2O3 (wt%)	9.4718	9.6674	9.7450	-0.2732	-0.0776	-2.8%	-0.8%
SRNL-SCS-2008-00043/Set 1	SB5-22	HfO2 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00043/Set 1	SB5-22	K2O (wt%)	0.0602	0.0617	0.0270	0.0332	0.0347	123.1%	128.7%

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

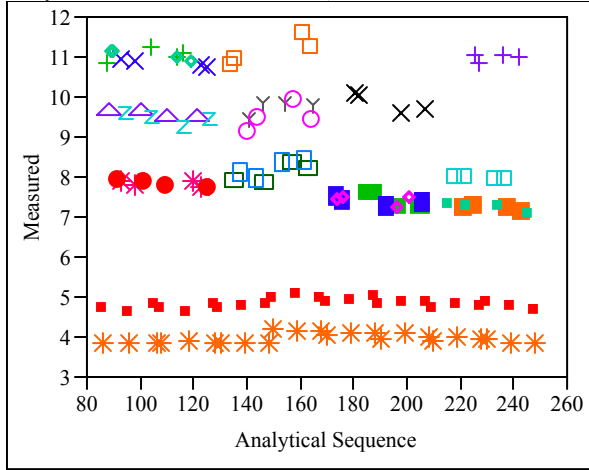
Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00043/Set 1	SB5-22	La2O3 (wt%)	0.0657	0.0657	0.0680	-0.0023	-0.0023	-3.4%	-3.4%
SRNL-SCS-2008-00043/Set 1	SB5-22	Li2O (wt%)	3.0733	3.0816	3.1000	-0.0267	-0.0184	-0.9%	-0.6%
SRNL-SCS-2008-00043/Set 1	SB5-22	MgO (wt%)	0.4938	0.5119	0.4940	-0.0002	0.0179	0.0%	3.6%
SRNL-SCS-2008-00043/Set 1	SB5-22	MnO (wt%)	2.1111	2.1293	2.0380	0.0731	0.0913	3.6%	4.5%
SRNL-SCS-2008-00043/Set 1	SB5-22	Na2O (wt%)	14.0866	13.7666	14.1540	-0.0674	-0.3874	-0.5%	-2.7%
SRNL-SCS-2008-00043/Set 1	SB5-22	Nd2O3 (wt%)	3.0910	3.4345	3.1170	-0.0260	0.3175	-0.8%	10.2%
SRNL-SCS-2008-00043/Set 1	SB5-22	NiO (wt%)	0.9197	1.0644	1.1440	-0.2243	-0.0796	-19.6%	-7.0%
SRNL-SCS-2008-00043/Set 1	SB5-22	PbO (wt%)	0.0108	0.0108	0.0090	0.0018	0.0018	19.7%	19.7%
SRNL-SCS-2008-00043/Set 1	SB5-22	SiO2 (wt%)	46.2624	46.3685	44.8110	1.4514	1.5575	3.2%	3.5%
SRNL-SCS-2008-00043/Set 1	SB5-22	SO4 (wt%)	0.2936	0.2936	0.2890	0.0046	0.0046	1.6%	1.6%
SRNL-SCS-2008-00043/Set 1	SB5-22	TiO2 (wt%)	0.0083	0.0088	0.0110	-0.0027	-0.0022	-24.2%	-19.9%
SRNL-SCS-2008-00043/Set 1	SB5-22	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00043/Set 1	SB5-22	ZrO2 (wt%)	0.0898	0.0898	0.1080	-0.0182	-0.0182	-16.8%	-16.8%
SRNL-SCS-2008-00043/Set 1	SB5-22	Sum	100.7819	101.2679	99.6020	1.1799	1.6659	1.2%	1.7%
SRNL-SCS-2008-00043/Set 1	SB5-23	Al2O3 (wt%)	8.0398	8.1695	7.9470	0.0928	0.2225	1.2%	2.8%
SRNL-SCS-2008-00043/Set 1	SB5-23	B2O3 (wt%)	8.7662	8.6127	8.6800	0.0862	-0.0673	1.0%	-0.8%
SRNL-SCS-2008-00043/Set 1	SB5-23	BaO (wt%)	0.0385	0.0413	0.0460	-0.0075	-0.0047	-16.3%	-10.1%
SRNL-SCS-2008-00043/Set 1	SB5-23	CaO (wt%)	2.0638	2.0287	2.0410	0.0228	-0.0123	1.1%	-0.6%
SRNL-SCS-2008-00043/Set 1	SB5-23	Ce2O3 (wt%)	0.1567	0.1567	0.1670	-0.0103	-0.0103	-6.2%	-6.2%
SRNL-SCS-2008-00043/Set 1	SB5-23	Cr2O3 (wt%)	0.1334	0.1344	0.1670	-0.0336	-0.0326	-20.1%	-19.5%
SRNL-SCS-2008-00043/Set 1	SB5-23	Fe2O3 (wt%)	10.1080	10.3146	10.4470	-0.3390	-0.1324	-3.2%	-1.3%
SRNL-SCS-2008-00043/Set 1	SB5-23	HfO2 (wt%)	2.9306	2.9306	3.3420	-0.4114	-0.4114	-12.3%	-12.3%
SRNL-SCS-2008-00043/Set 1	SB5-23	K2O (wt%)	0.0602	0.0617	0.0300	0.0302	0.0317	100.8%	105.8%
SRNL-SCS-2008-00043/Set 1	SB5-23	La2O3 (wt%)	0.0689	0.0689	0.0730	-0.0041	-0.0041	-5.6%	-5.6%
SRNL-SCS-2008-00043/Set 1	SB5-23	Li2O (wt%)	3.7191	3.7294	3.7200	-0.0009	0.0094	0.0%	0.3%
SRNL-SCS-2008-00043/Set 1	SB5-23	MgO (wt%)	0.5439	0.5641	0.5290	0.0149	0.0351	2.8%	6.6%
SRNL-SCS-2008-00043/Set 1	SB5-23	MnO (wt%)	2.2435	2.2627	2.1840	0.0595	0.0787	2.7%	3.6%
SRNL-SCS-2008-00043/Set 1	SB5-23	Na2O (wt%)	13.5137	13.2064	13.6500	-0.1363	-0.4436	-1.0%	-3.2%
SRNL-SCS-2008-00043/Set 1	SB5-23	Nd2O3 (wt%)	0.0583	0.0648	0.0000	0.0583	0.0648		
SRNL-SCS-2008-00043/Set 1	SB5-23	NiO (wt%)	1.0349	1.1994	1.2270	-0.1921	-0.0276	-15.7%	-2.3%
SRNL-SCS-2008-00043/Set 1	SB5-23	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00043/Set 1	SB5-23	SiO2 (wt%)	45.1392	45.2416	44.8690	0.2702	0.3726	0.6%	0.8%
SRNL-SCS-2008-00043/Set 1	SB5-23	SO4 (wt%)	0.3018	0.3018	0.3100	-0.0082	-0.0082	-2.6%	-2.6%
SRNL-SCS-2008-00043/Set 1	SB5-23	TiO2 (wt%)	0.0083	0.0088	0.0120	-0.0037	-0.0032	-30.5%	-26.5%
SRNL-SCS-2008-00043/Set 1	SB5-23	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00043/Set 1	SB5-23	ZrO2 (wt%)	0.1148	0.1148	0.1160	-0.0012	-0.0012	-1.0%	-1.0%
SRNL-SCS-2008-00043/Set 1	SB5-23	Sum	99.0607	99.2300	99.5740	-0.5133	-0.3440	-0.5%	-0.3%
SRNL-SCS-2008-00043/Set 1	SB5-24	Al2O3 (wt%)	11.3701	11.5530	11.0090	0.3611	0.5440	3.3%	4.9%
SRNL-SCS-2008-00043/Set 1	SB5-24	B2O3 (wt%)	10.1427	9.9651	9.9200	0.2227	0.0451	2.2%	0.5%
SRNL-SCS-2008-00043/Set 1	SB5-24	BaO (wt%)	0.0338	0.0363	0.0390	-0.0052	-0.0027	-13.4%	-7.0%
SRNL-SCS-2008-00043/Set 1	SB5-24	CaO (wt%)	0.7010	0.6892	0.6770	0.0240	0.0122	3.5%	1.8%
SRNL-SCS-2008-00043/Set 1	SB5-24	Ce2O3 (wt%)	0.1382	0.1382	0.1410	-0.0028	-0.0028	-2.0%	-2.0%
SRNL-SCS-2008-00043/Set 1	SB5-24	Cr2O3 (wt%)	0.1209	0.1219	0.1420	-0.0211	-0.0201	-14.8%	-14.1%
SRNL-SCS-2008-00043/Set 1	SB5-24	Fe2O3 (wt%)	8.3852	8.5575	8.8340	-0.4488	-0.2765	-5.1%	-3.1%
SRNL-SCS-2008-00043/Set 1	SB5-24	HfO2 (wt%)	2.4176	2.4176	2.8260	-0.4084	-0.4084	-14.5%	-14.5%
SRNL-SCS-2008-00043/Set 1	SB5-24	K2O (wt%)	0.0602	0.0617	0.0250	0.0352	0.0367	140.9%	147.0%
SRNL-SCS-2008-00043/Set 1	SB5-24	La2O3 (wt%)	0.0598	0.0598	0.0620	-0.0022	-0.0022	-3.5%	-3.5%
SRNL-SCS-2008-00043/Set 1	SB5-24	Li2O (wt%)	3.1056	3.1139	3.1000	0.0056	0.0139	0.2%	0.4%
SRNL-SCS-2008-00043/Set 1	SB5-24	MgO (wt%)	0.4718	0.4896	0.4470	0.0248	0.0426	5.5%	9.5%
SRNL-SCS-2008-00043/Set 1	SB5-24	MnO (wt%)	1.9400	1.9568	1.8470	0.0930	0.1098	5.0%	5.9%
SRNL-SCS-2008-00043/Set 1	SB5-24	Na2O (wt%)	14.4236	14.0959	14.3960	0.0276	-0.3001	0.2%	-2.1%
SRNL-SCS-2008-00043/Set 1	SB5-24	Nd2O3 (wt%)	0.0583	0.0648	0.0000	0.0583	0.0648		
SRNL-SCS-2008-00043/Set 1	SB5-24	NiO (wt%)	0.9092	1.0551	1.0370	-0.1278	0.0181	-12.3%	1.7%
SRNL-SCS-2008-00043/Set 1	SB5-24	PbO (wt%)	0.0108	0.0108	0.0080	0.0028	0.0028	34.7%	34.7%
SRNL-SCS-2008-00043/Set 1	SB5-24	SiO2 (wt%)	45.6741	45.7777	44.7370	0.9371	1.0407	2.1%	2.3%
SRNL-SCS-2008-00043/Set 1	SB5-24	SO4 (wt%)	0.2254	0.2254	0.2770	-0.0516	-0.0516	-18.6%	-18.6%
SRNL-SCS-2008-00043/Set 1	SB5-24	TiO2 (wt%)	0.0083	0.0088	0.0100	-0.0017	-0.0012	-16.6%	-11.8%
SRNL-SCS-2008-00043/Set 1	SB5-24	ZnO (wt%)	0.0062	0.0062	0.0060	0.0002	0.0002	3.7%	3.7%
SRNL-SCS-2008-00043/Set 1	SB5-24	ZrO2 (wt%)	0.0824	0.0824	0.0980	-0.0156	-0.0156	-15.9%	-15.9%
SRNL-SCS-2008-00043/Set 1	SB5-24	Sum	100.3452	100.4879	99.6380	0.7072	0.8499	0.7%	0.9%
SRNL-SCS-2008-00043/Set 1	SB5-25	Al2O3 (wt%)	10.3734	10.5409	10.3050	0.0684	0.2359	0.7%	2.3%
SRNL-SCS-2008-00043/Set 1	SB5-25	B2O3 (wt%)	8.8789	8.7234	8.6800	0.1989	0.0434	2.3%	0.5%
SRNL-SCS-2008-00043/Set 1	SB5-25	BaO (wt%)	0.0380	0.0407	0.0470	-0.0090	-0.0063	-19.2%	-13.3%
SRNL-SCS-2008-00043/Set 1	SB5-25	CaO (wt%)	2.0708	2.0358	2.0540	0.0168	-0.0182	0.8%	-0.9%
SRNL-SCS-2008-00043/Set 1	SB5-25	Ce2O3 (wt%)	0.1575	0.1575	0.1690	-0.0115	-0.0115	-6.8%	-6.8%
SRNL-SCS-2008-00043/Set 1	SB5-25	Cr2O3 (wt%)	0.1410	0.1422	0.1700	-0.0290	-0.0278	-17.0%	-16.4%
SRNL-SCS-2008-00043/Set 1	SB5-25	Fe2O3 (wt%)	10.2402	10.4515	10.6150	-0.3748	-0.1635	-3.5%	-1.5%
SRNL-SCS-2008-00043/Set 1	SB5-25	HfO2 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		

Table A6. Average Measured and Bias-Corrected Chemical Compositions Versus Targeted Compositions by Oxide by Study Glass. (continued)

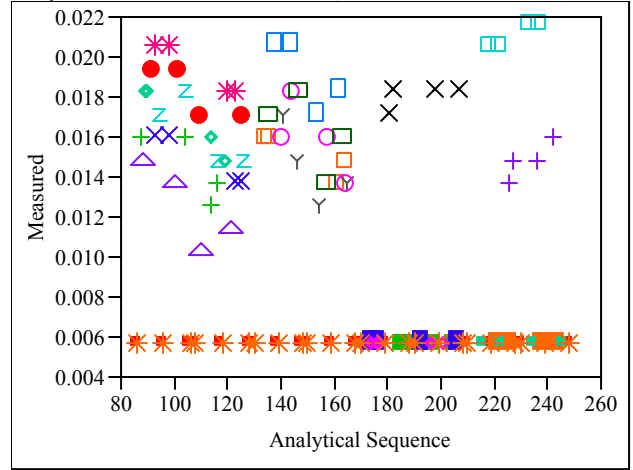
Analytical Plan/Set	Glass ID	Oxide	Measured (wt%)	Measured BC (wt%)	Targeted (wt%)	Diff of Measured	Diff of Meas BC	% Diff of Measured	% Diff of Meas BC
SRNL-SCS-2008-00043/Set 1	SB5-25	K2O (wt%)	0.0602	0.0617	0.0300	0.0302	0.0317	100.8%	105.8%
SRNL-SCS-2008-00043/Set 1	SB5-25	La2O3 (wt%)	0.0701	0.0701	0.0740	-0.0039	-0.0039	-5.3%	-5.3%
SRNL-SCS-2008-00043/Set 1	SB5-25	Li2O (wt%)	3.6276	3.6375	3.7200	-0.0924	-0.0825	-2.5%	-2.2%
SRNL-SCS-2008-00043/Set 1	SB5-25	MgO (wt%)	0.5543	0.5749	0.5380	0.0163	0.0369	3.0%	6.9%
SRNL-SCS-2008-00043/Set 1	SB5-25	MnO (wt%)	2.2854	2.3052	2.2200	0.0654	0.0852	2.9%	3.8%
SRNL-SCS-2008-00043/Set 1	SB5-25	Na2O (wt%)	13.9855	13.6686	14.3550	-0.3695	-0.6864	-2.6%	-4.8%
SRNL-SCS-2008-00043/Set 1	SB5-25	Nd2O3 (wt%)	0.0583	0.0648	0.0000	0.0583	0.0648		
SRNL-SCS-2008-00043/Set 1	SB5-25	NiO (wt%)	1.0594	1.2287	1.2470	-0.1876	-0.0183	-15.0%	-1.5%
SRNL-SCS-2008-00043/Set 1	SB5-25	PbO (wt%)	0.0108	0.0108	0.0100	0.0008	0.0008	7.7%	7.7%
SRNL-SCS-2008-00043/Set 1	SB5-25	SiO2 (wt%)	45.3532	45.4565	44.8820	0.4712	0.5745	1.0%	1.3%
SRNL-SCS-2008-00043/Set 1	SB5-25	SO4 (wt%)	0.3198	0.3198	0.3150	0.0048	0.0048	1.5%	1.5%
SRNL-SCS-2008-00043/Set 1	SB5-25	TiO2 (wt%)	0.0083	0.0088	0.0120	-0.0037	-0.0032	-30.5%	-26.5%
SRNL-SCS-2008-00043/Set 1	SB5-25	ZnO (wt%)	0.0062	0.0062	0.0070	-0.0008	-0.0008	-11.1%	-11.1%
SRNL-SCS-2008-00043/Set 1	SB5-25	ZrO2 (wt%)	0.1077	0.1077	0.1180	-0.0103	-0.0103	-8.7%	-8.7%
SRNL-SCS-2008-00043/Set 1	SB5-25	Sum	99.4126	99.6194	99.5680	-0.1554	0.0514	-0.2%	0.1%
SRNL-SCS-2008-00043/Set 1	SB5-26	Al2O3 (wt%)	8.8381	8.9814	8.7140	0.1241	0.2674	1.4%	3.1%
SRNL-SCS-2008-00043/Set 1	SB5-26	B2O3 (wt%)	10.2232	10.0442	9.9200	0.3032	0.1242	3.1%	1.3%
SRNL-SCS-2008-00043/Set 1	SB5-26	BaO (wt%)	0.0410	0.0441	0.0500	-0.0090	-0.0059	-17.9%	-11.9%
SRNL-SCS-2008-00043/Set 1	SB5-26	CaO (wt%)	0.8783	0.8636	0.8780	0.0003	-0.0144	0.0%	-1.6%
SRNL-SCS-2008-00043/Set 1	SB5-26	Ce2O3 (wt%)	0.1783	0.1783	0.1830	-0.0047	-0.0047	-2.6%	-2.6%
SRNL-SCS-2008-00043/Set 1	SB5-26	Cr2O3 (wt%)	0.1458	0.1470	0.1830	-0.0372	-0.0360	-20.3%	-19.7%
SRNL-SCS-2008-00043/Set 1	SB5-26	Fe2O3 (wt%)	10.7406	10.9614	11.4540	-0.7134	-0.4926	-6.2%	-4.3%
SRNL-SCS-2008-00043/Set 1	SB5-26	HfO2 (wt%)	0.0059	0.0059	0.0000	0.0059	0.0059		
SRNL-SCS-2008-00043/Set 1	SB5-26	K2O (wt%)	0.0602	0.0617	0.0330	0.0272	0.0287	82.5%	87.1%
SRNL-SCS-2008-00043/Set 1	SB5-26	La2O3 (wt%)	0.0783	0.0783	0.0800	-0.0017	-0.0017	-2.1%	-2.1%
SRNL-SCS-2008-00043/Set 1	SB5-26	Li2O (wt%)	3.1325	3.1409	3.1000	0.0325	0.0409	1.0%	1.3%
SRNL-SCS-2008-00043/Set 1	SB5-26	MgO (wt%)	0.6190	0.6420	0.5800	0.0390	0.0620	6.7%	10.7%
SRNL-SCS-2008-00043/Set 1	SB5-26	MnO (wt%)	2.4630	2.4842	2.3950	0.0680	0.0892	2.8%	3.7%
SRNL-SCS-2008-00043/Set 1	SB5-26	Na2O (wt%)	14.9291	14.5877	15.1680	-0.2389	-0.5803	-1.6%	-3.8%
SRNL-SCS-2008-00043/Set 1	SB5-26	Nd2O3 (wt%)	0.0583	0.0648	0.0000	0.0583	0.0648		
SRNL-SCS-2008-00043/Set 1	SB5-26	NiO (wt%)	1.1946	1.3855	1.3450	-0.1504	0.0405	-11.2%	3.0%
SRNL-SCS-2008-00043/Set 1	SB5-26	PbO (wt%)	0.0108	0.0108	0.0110	-0.0002	-0.0002	-2.1%	-2.1%
SRNL-SCS-2008-00043/Set 1	SB5-26	SiO2 (wt%)	45.4601	45.5635	44.9510	0.5091	0.6125	1.1%	1.4%
SRNL-SCS-2008-00043/Set 1	SB5-26	SO4 (wt%)	0.3273	0.3273	0.3400	-0.0127	-0.0127	-3.7%	-3.7%
SRNL-SCS-2008-00043/Set 1	SB5-26	TiO2 (wt%)	0.0083	0.0088	0.0130	-0.0047	-0.0042	-35.8%	-32.2%
SRNL-SCS-2008-00043/Set 1	SB5-26	ZnO (wt%)	0.0062	0.0062	0.0080	-0.0018	-0.0018	-22.2%	-22.2%
SRNL-SCS-2008-00043/Set 1	SB5-26	ZrO2 (wt%)	0.1179	0.1179	0.1270	-0.0091	-0.0091	-7.2%	-7.2%
SRNL-SCS-2008-00043/Set 1	SB5-26	Sum	99.5168	99.7055	99.5330	-0.0162	0.1725	0.0%	0.2%

Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo.

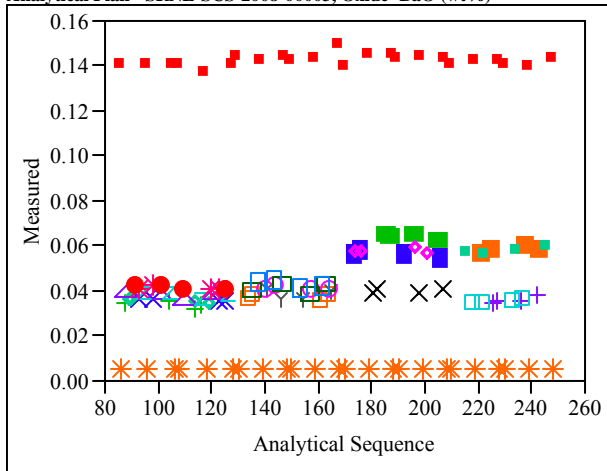
Measured By Analytical Sequence Prep=LM,
Analytical Plan=SRNL-SCS-2008-00003, Oxide=Al2O3 (wt%)



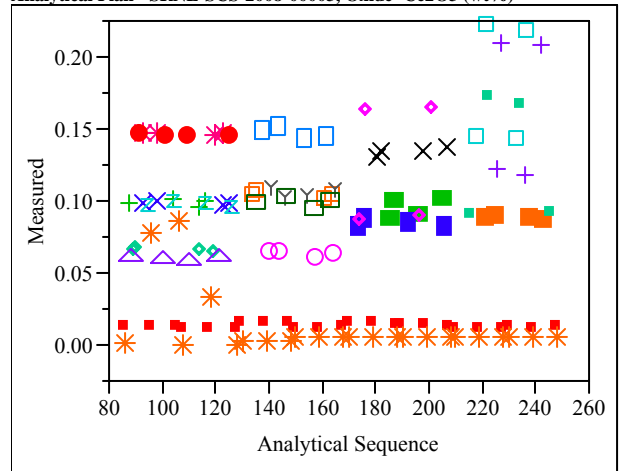
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=CdO (wt%)



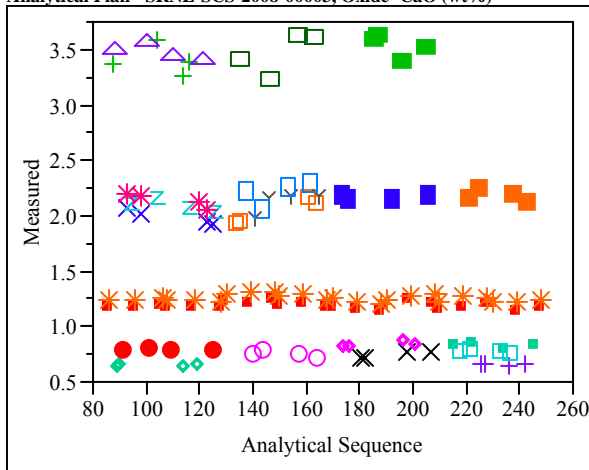
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=BaO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=Ce2O3 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=CaO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=Cr2O3 (wt%)

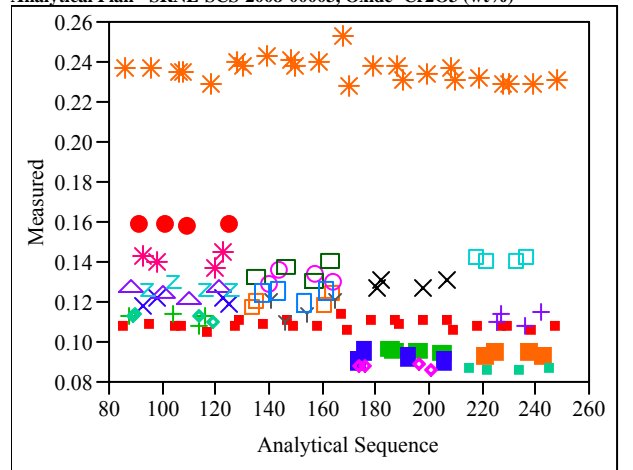
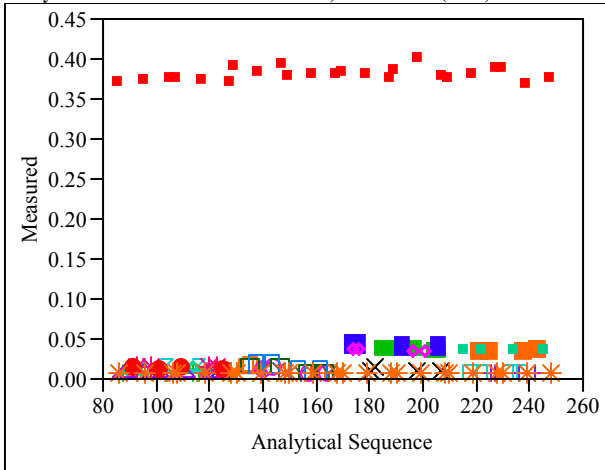
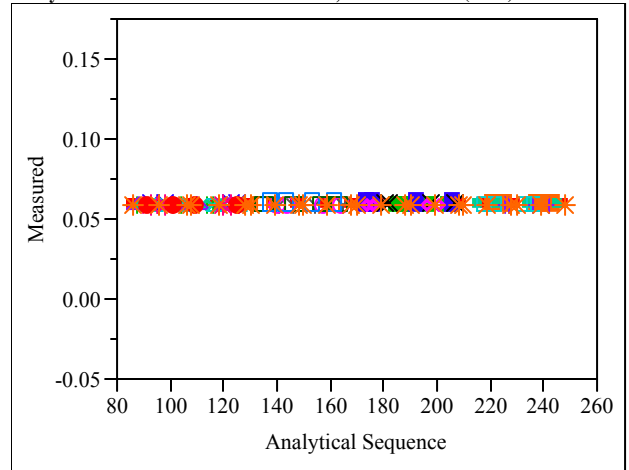


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

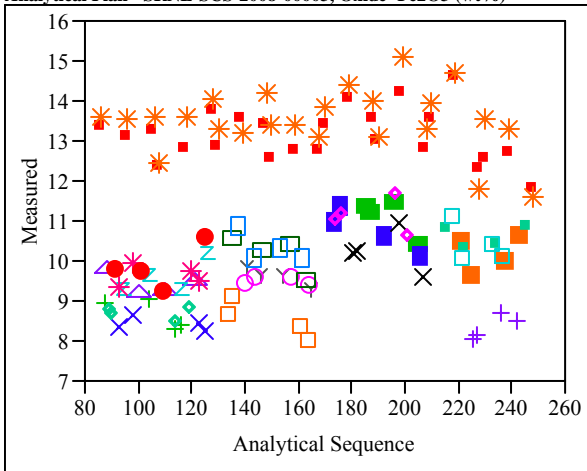
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=CuO (wt%)



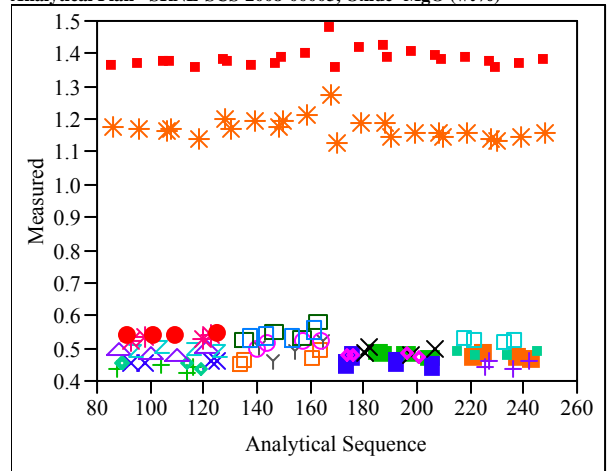
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=La2O3 (wt%)



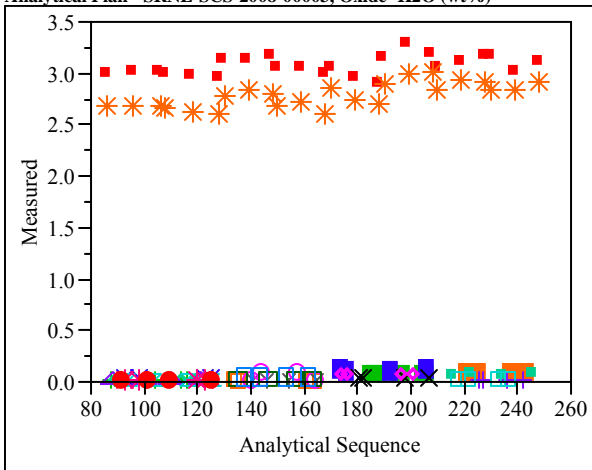
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=Fe2O3 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=MgO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=K2O (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=MnO (wt%)

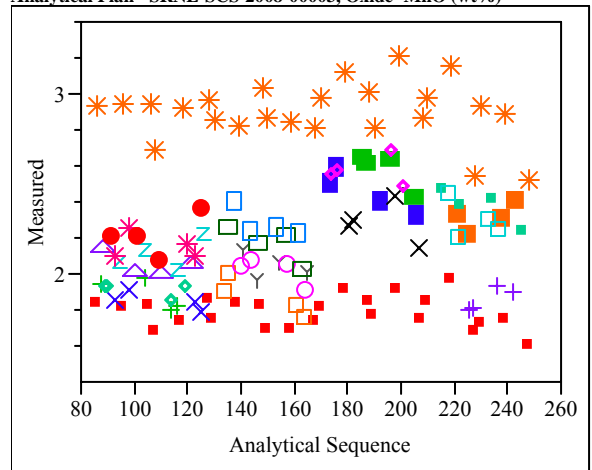
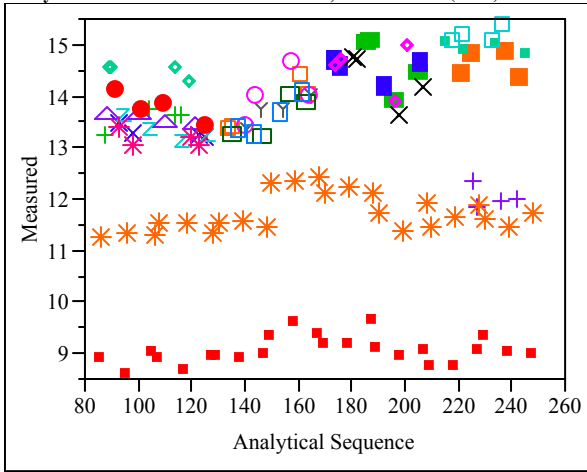
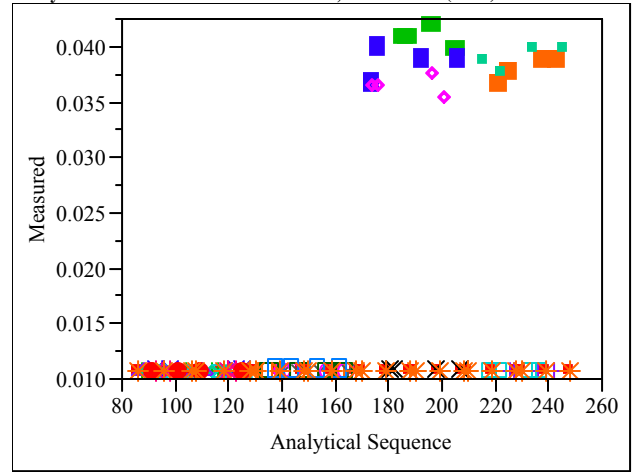


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

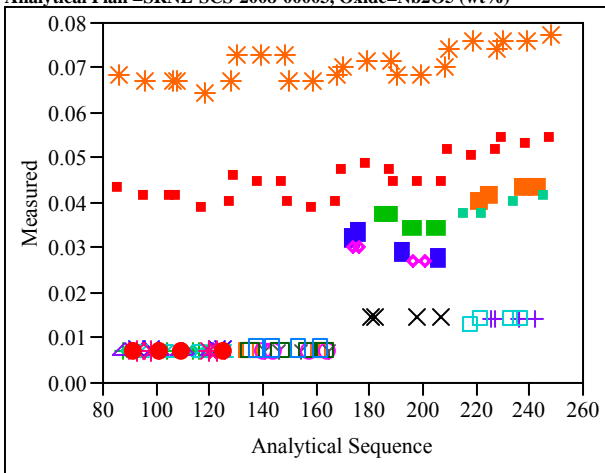
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=Na2O (wt%)



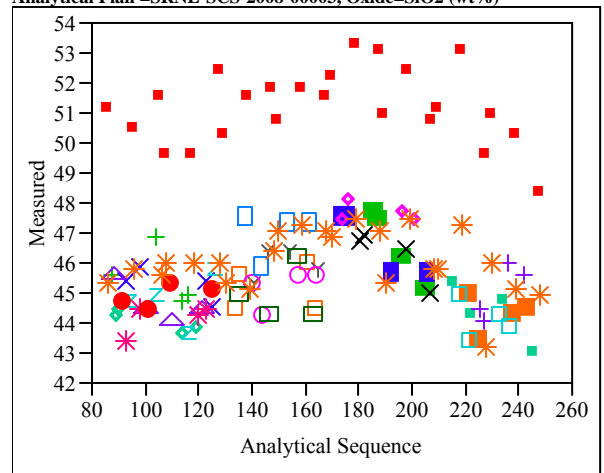
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=PbO (wt%)



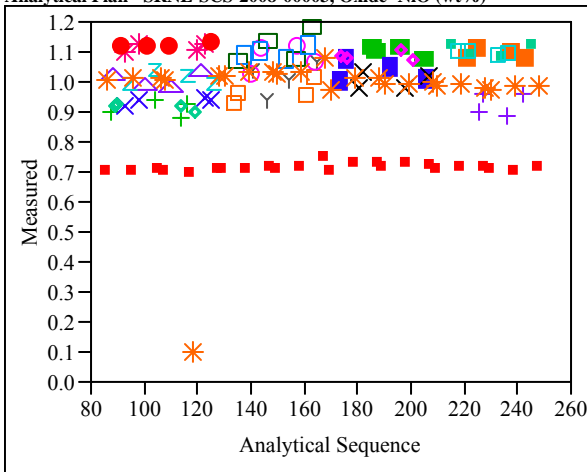
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=Nb2O5 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=SiO2 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=NiO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=SO4 (wt%)

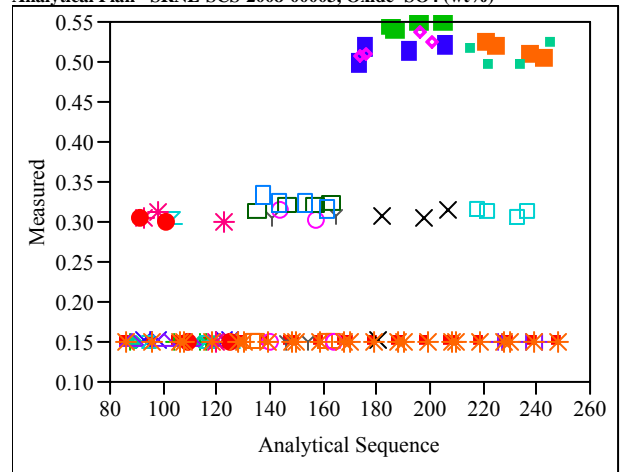
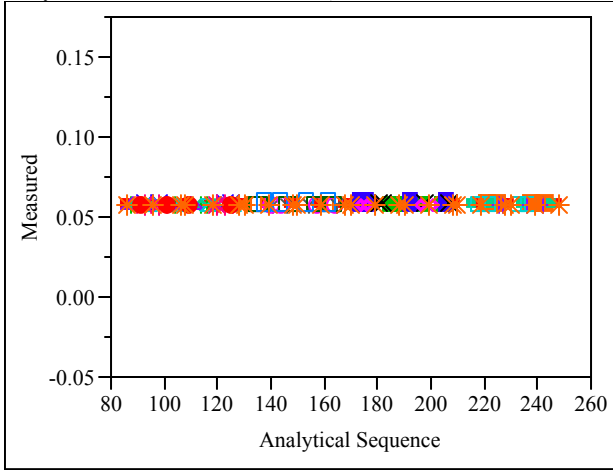
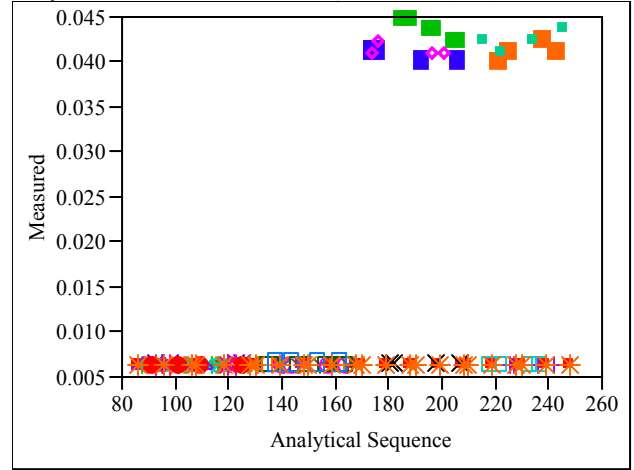


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

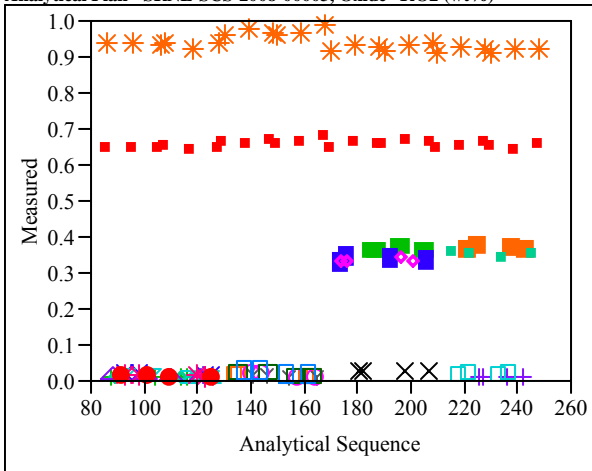
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=ThO2 (wt%)



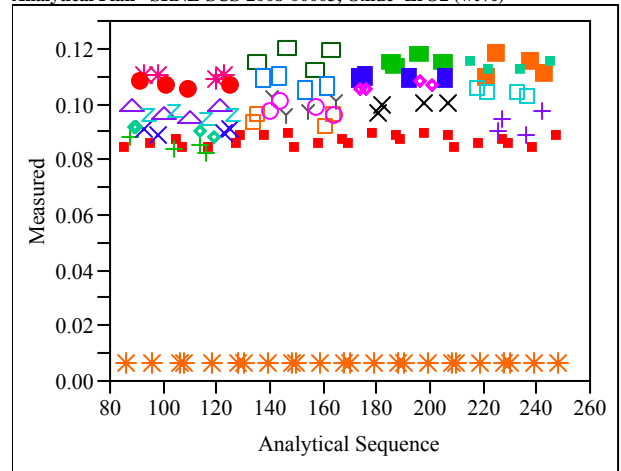
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=ZnO (wt%)



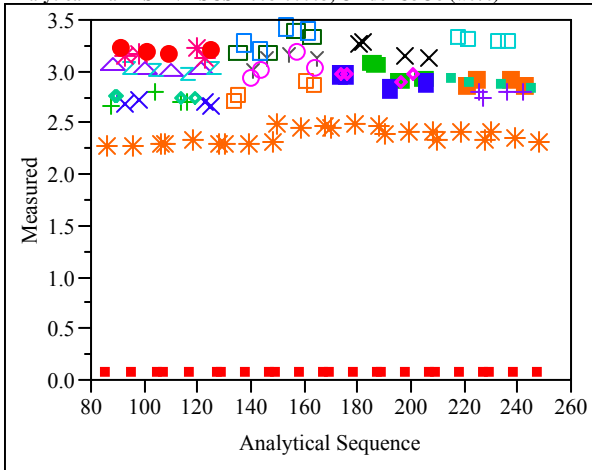
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=TiO2 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=ZrO2 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=U3O8 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Al2O3 (wt%)

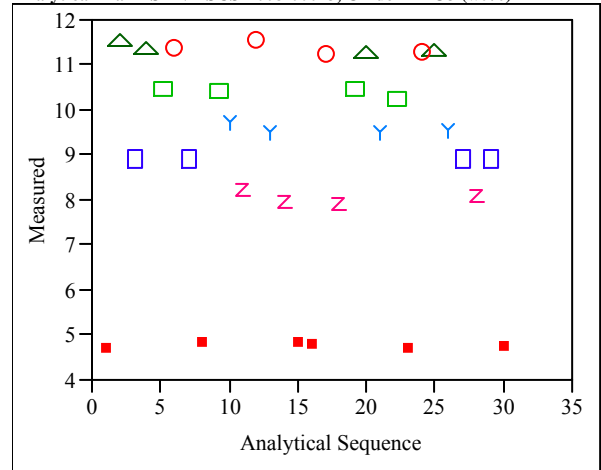
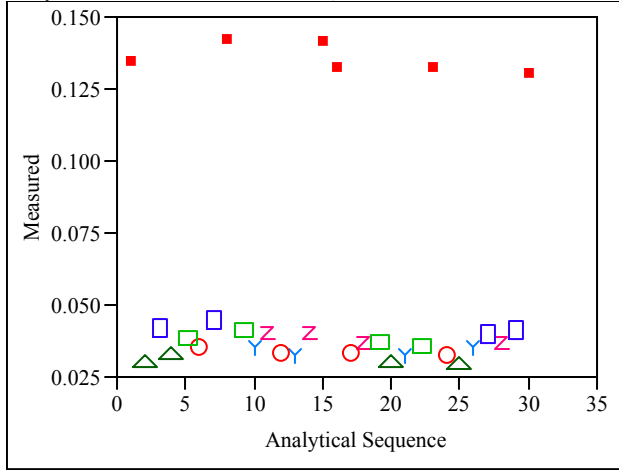
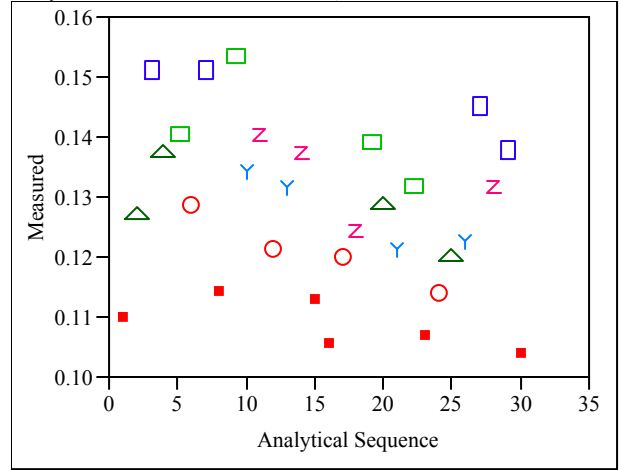


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

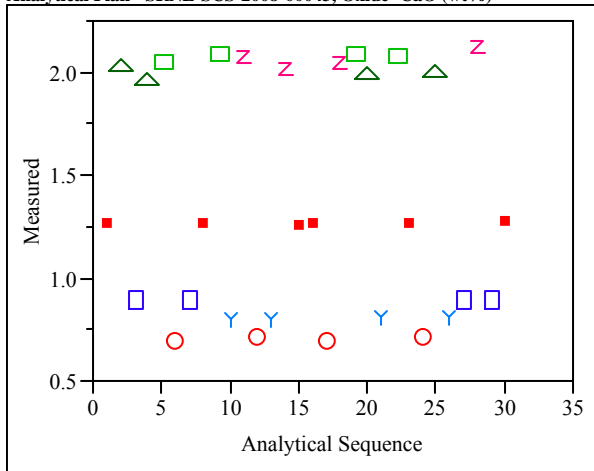
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=BaO (wt%)



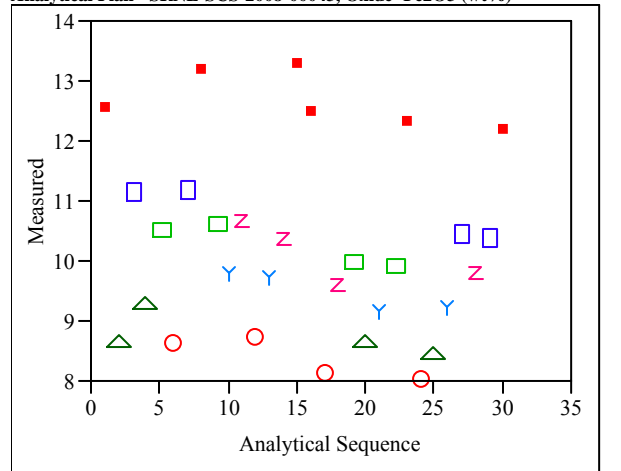
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Cr2O3 (wt%)



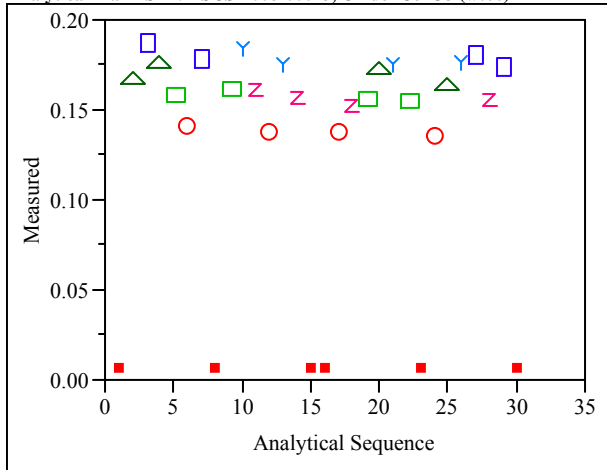
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=CaO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Fe2O3 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Ce2O3 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=HfO2 (wt%)

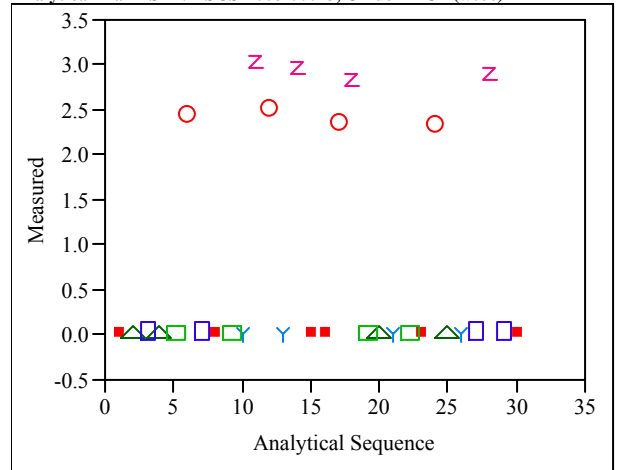
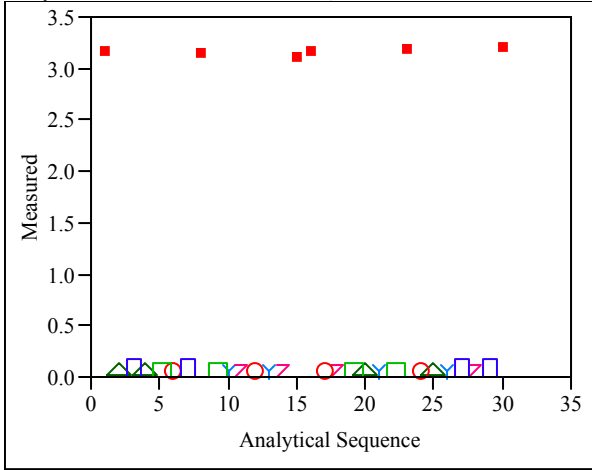
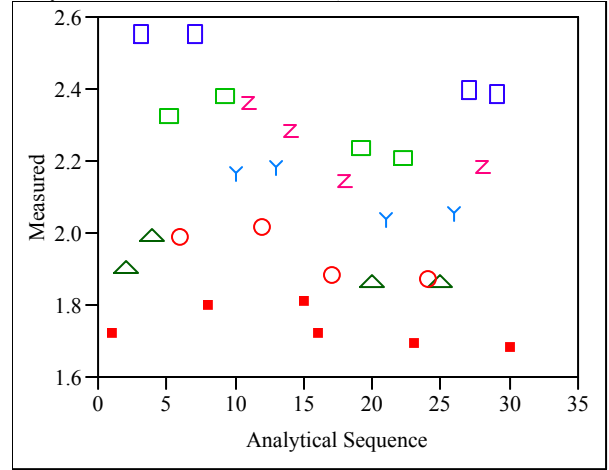


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

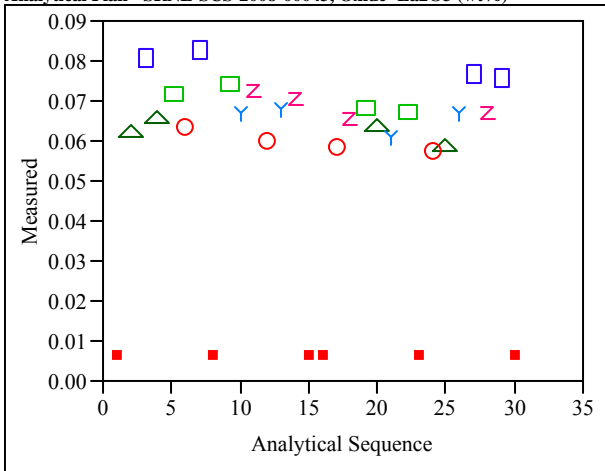
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=K2O (wt%)



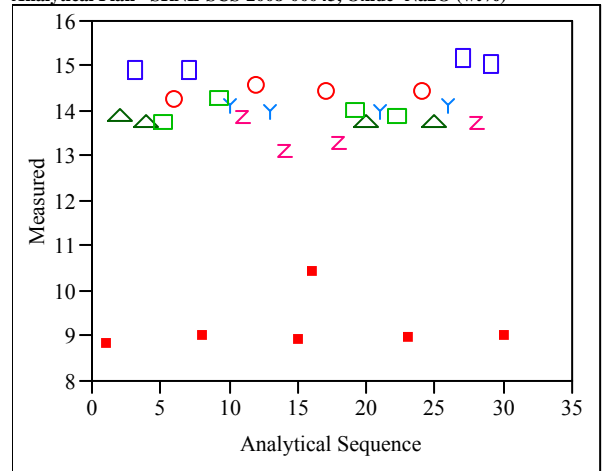
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=MnO (wt%)



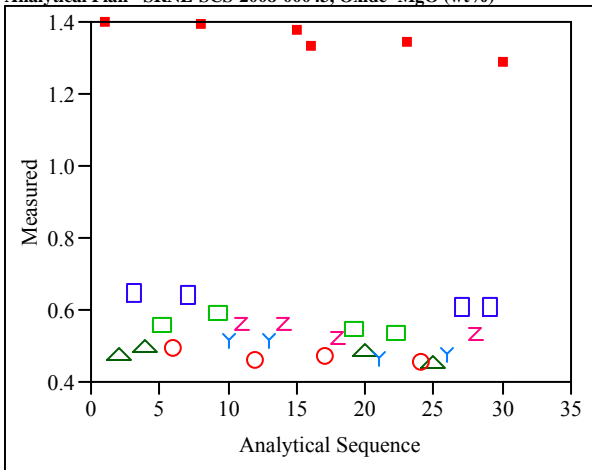
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=La2O3 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Na2O (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=MgO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Nd2O3 (wt%)

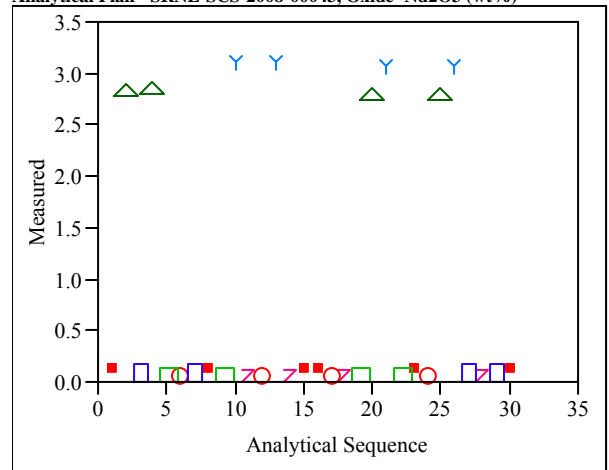
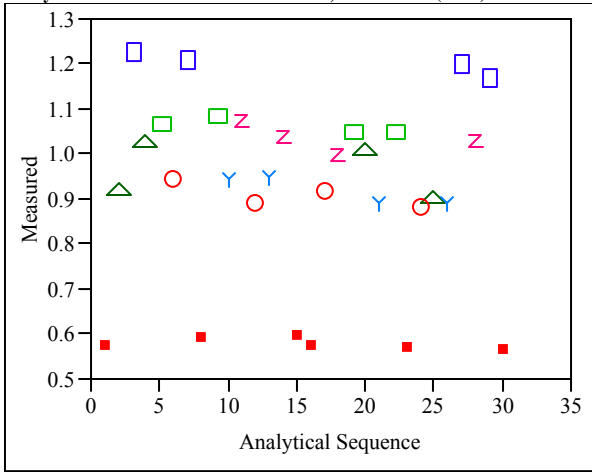
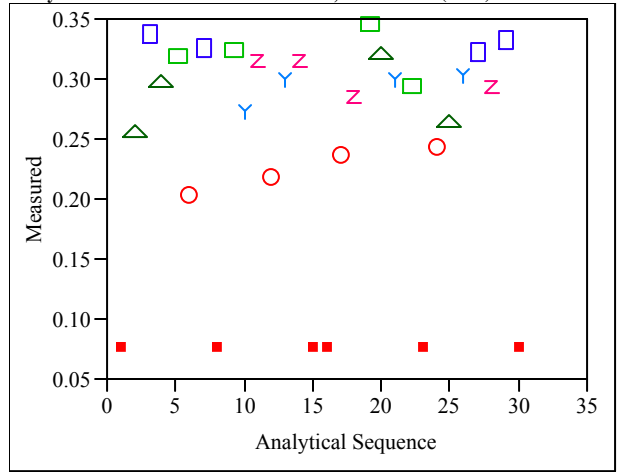


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

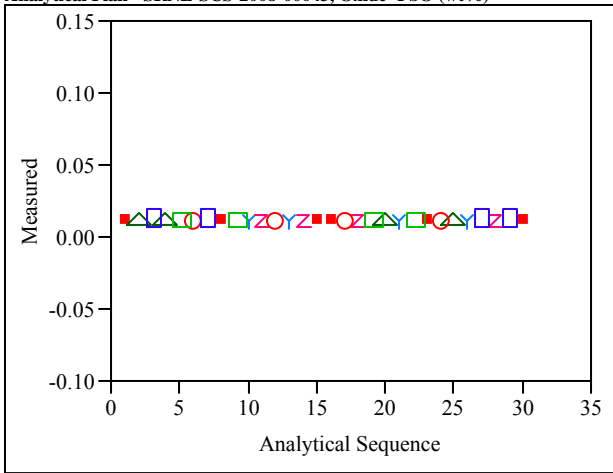
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=NiO (wt%)



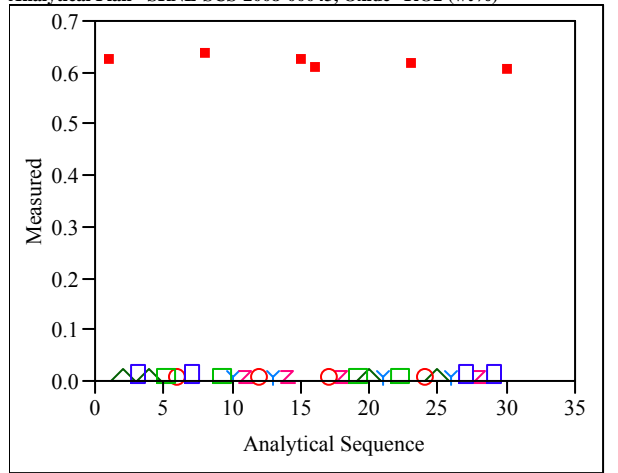
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=SO4 (wt%)



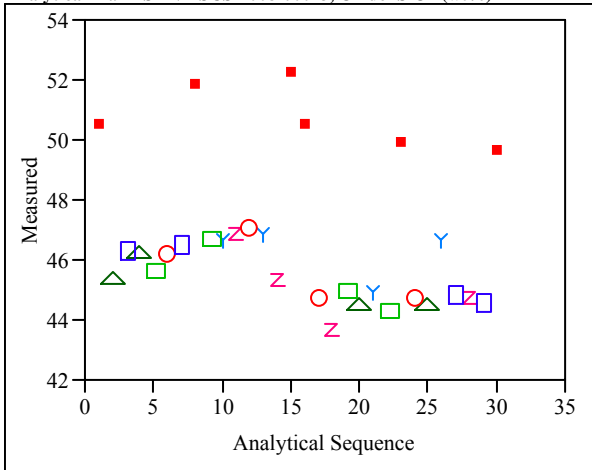
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=PbO (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=TiO2 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=SiO2 (wt%)



Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=ZnO (wt%)

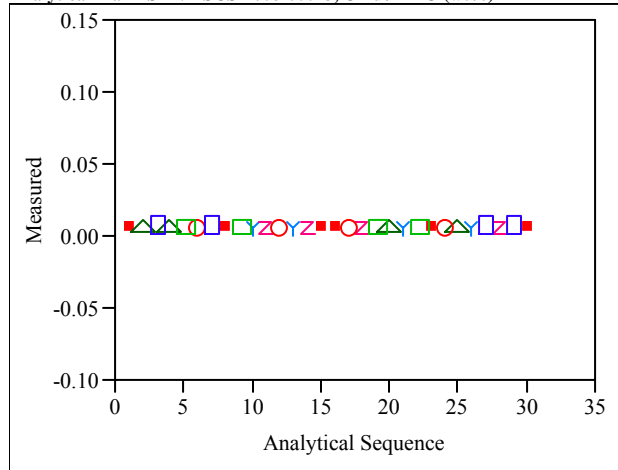
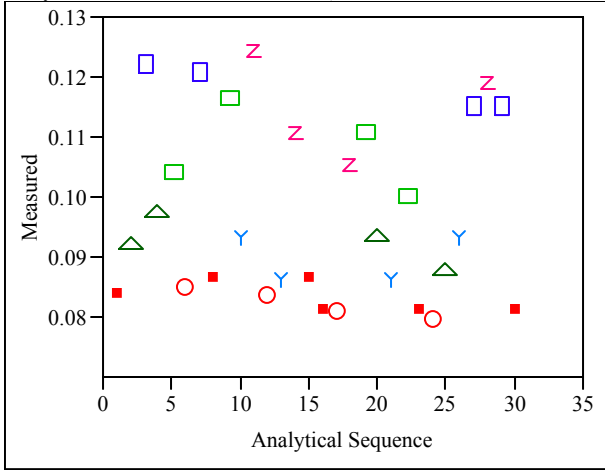
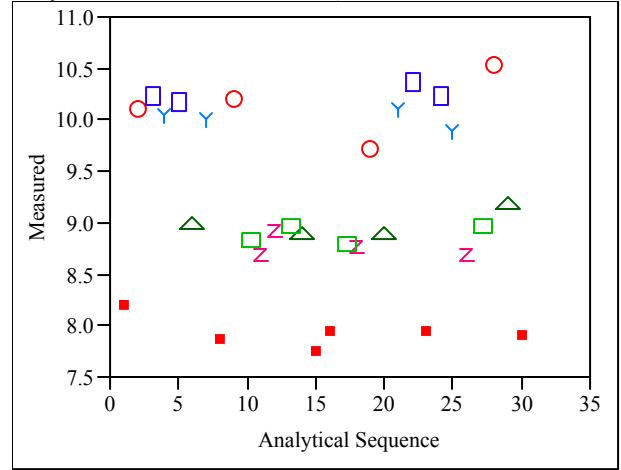


Exhibit A1. Oxide Measurements in Analytical Sequence for Samples by Prep Method and Analytical Plan Memo. (continued)

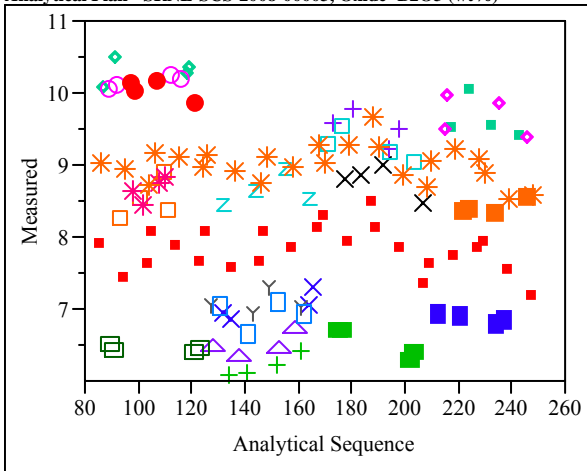
Measured By Analytical Sequence Prep=LM,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=ZrO2 (wt%)



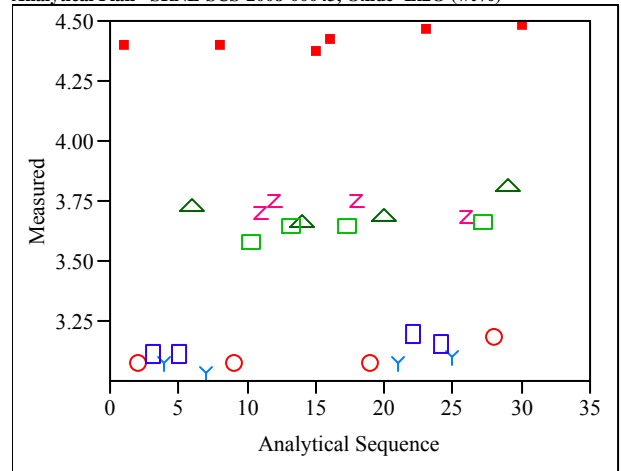
Measured By Analytical Sequence Prep=PF,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=B2O3 (wt%)



Measured By Analytical Sequence Prep=PF,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=B2O3 (wt%)



Measured By Analytical Sequence Prep=PF,
Analytical Plan =SRNL-SCS-2008-00043, Oxide=Li2O (wt%)



Measured By Analytical Sequence Prep=PF,
Analytical Plan =SRNL-SCS-2008-00003, Oxide=Li2O (wt%)

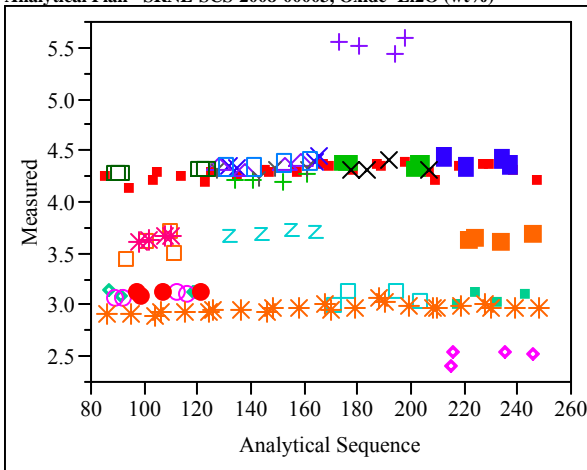


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo.

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Al2O3 (wt%)

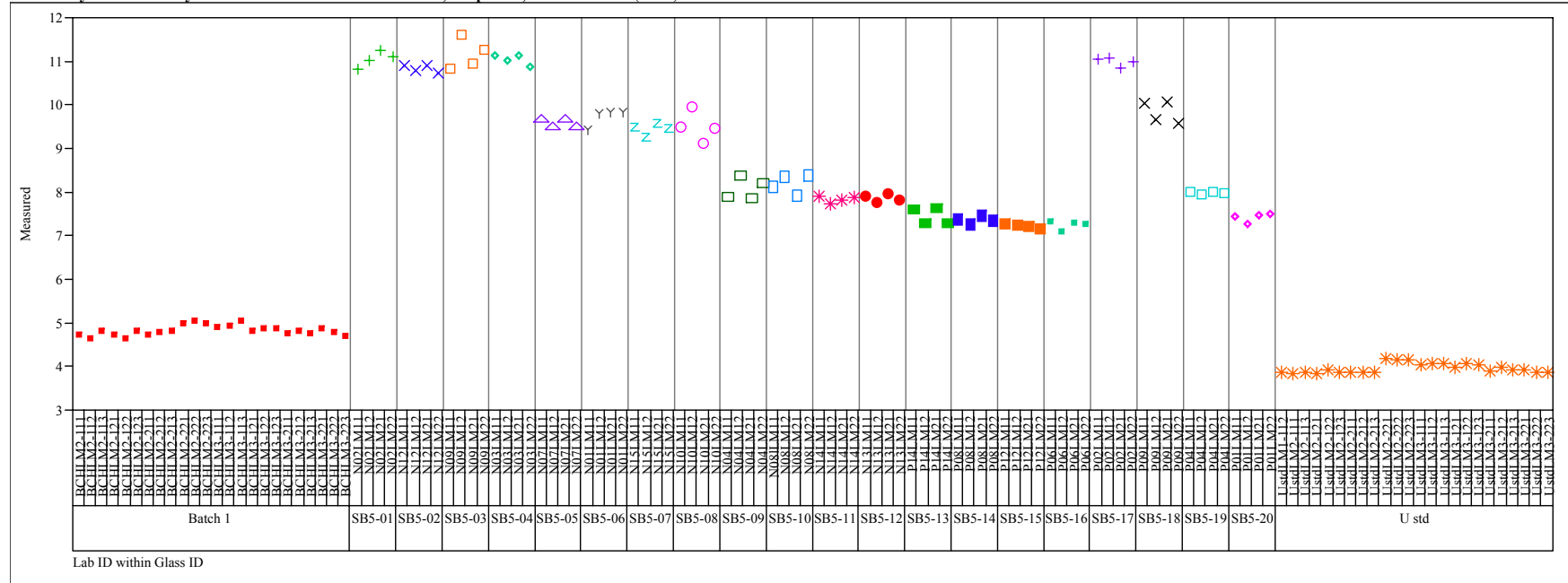


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=BaO (wt%)

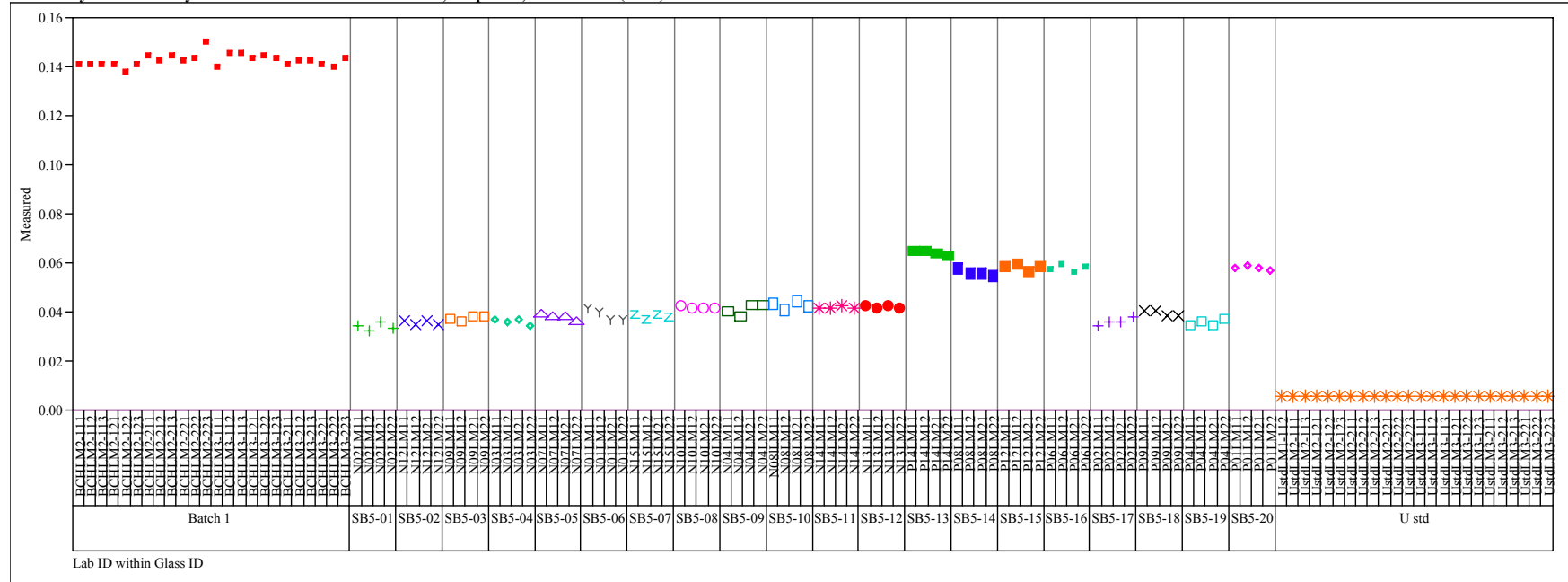


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CaO (wt%)

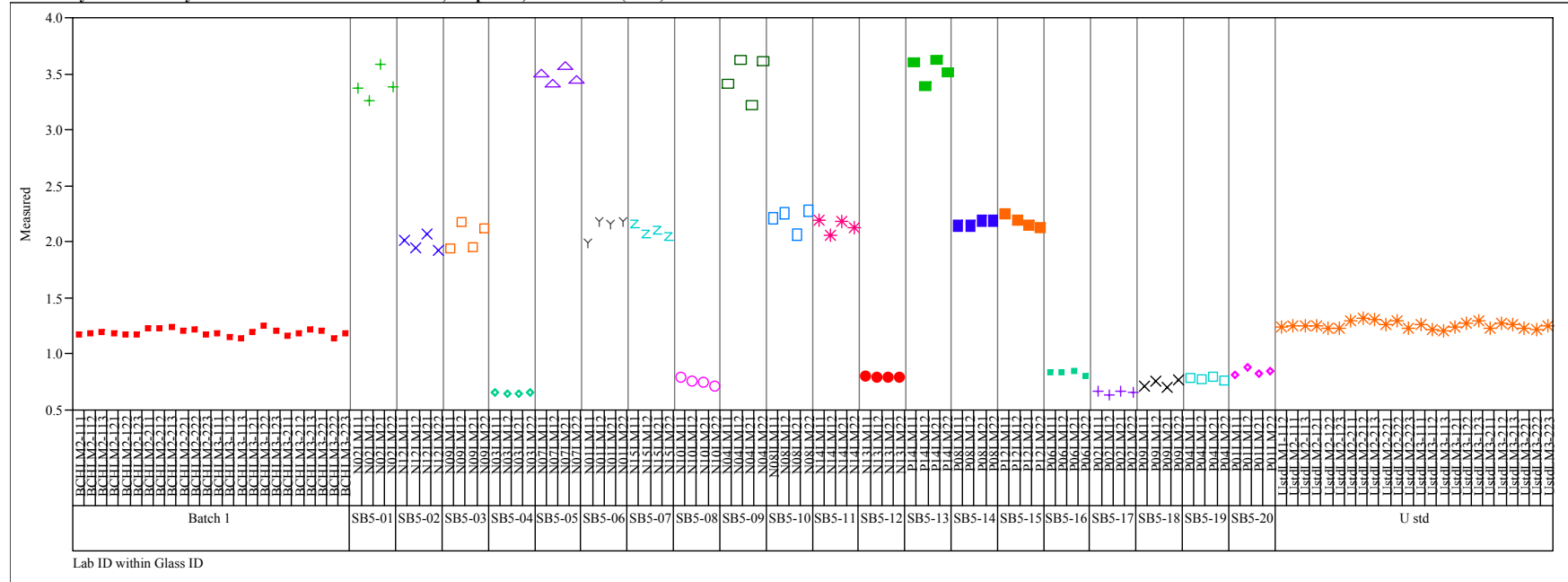


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CdO (wt%)

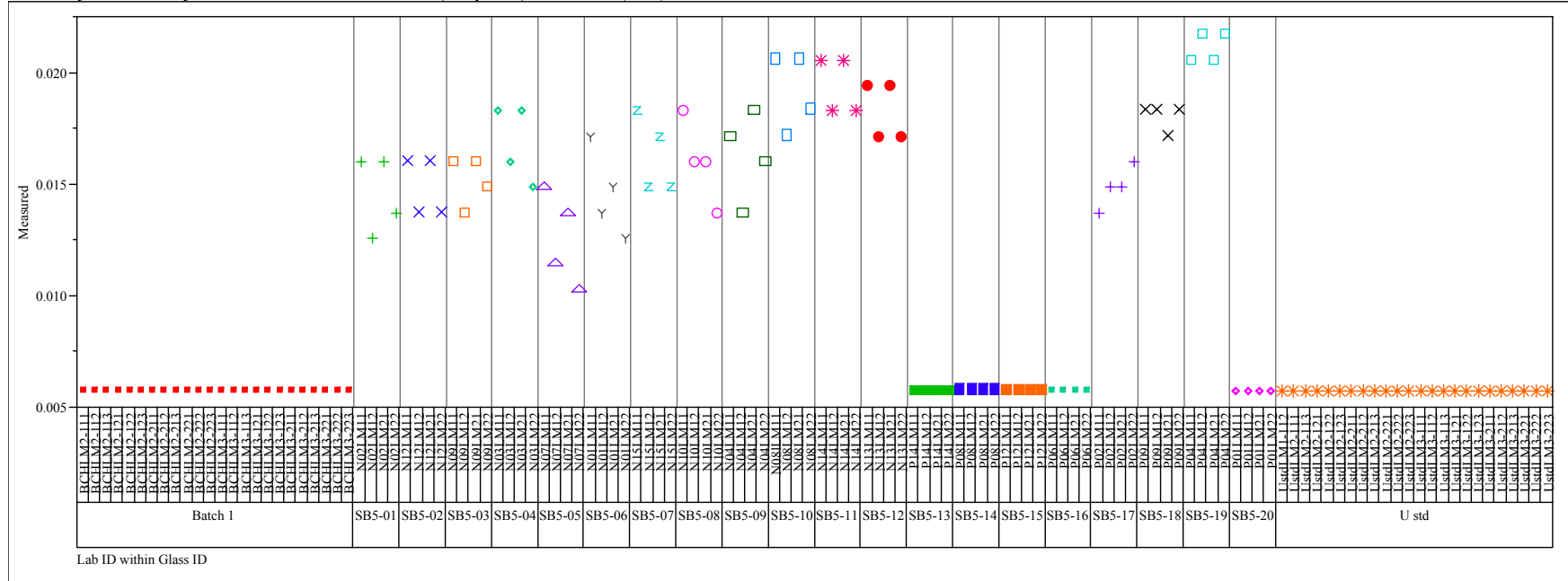


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Ce2O3 (wt%)

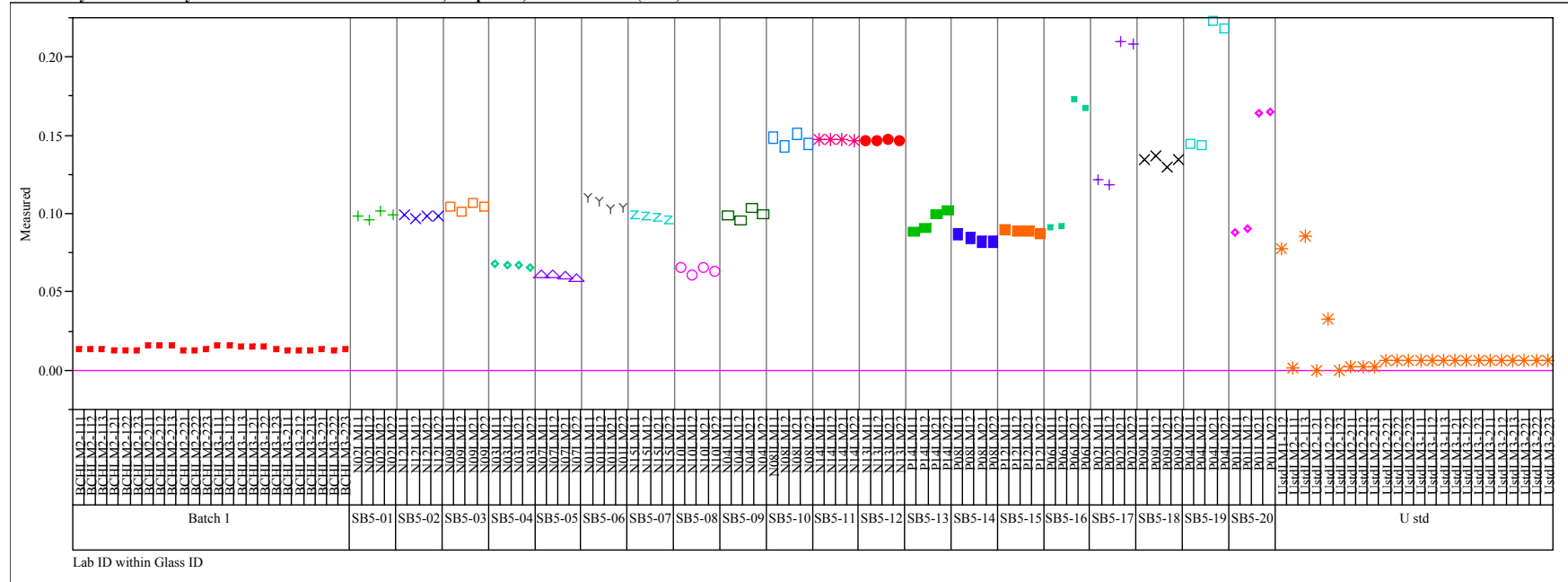


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Cr2O3 (wt%)

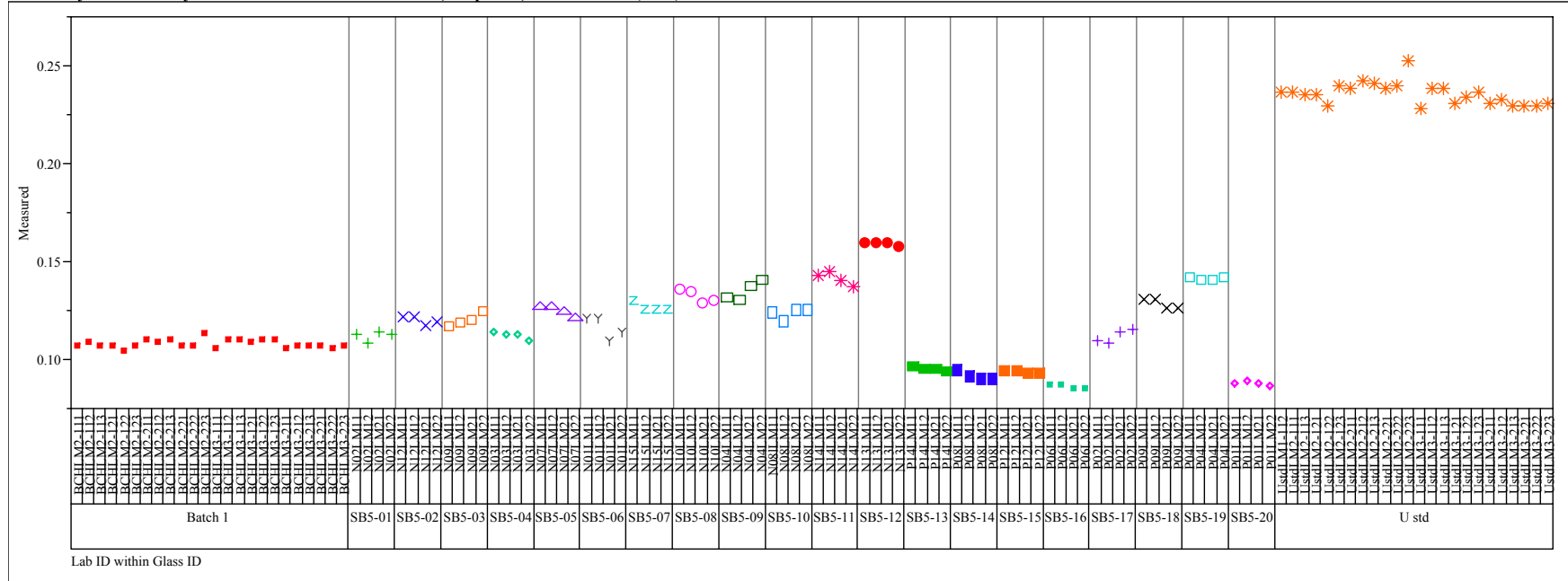


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CuO (wt%)

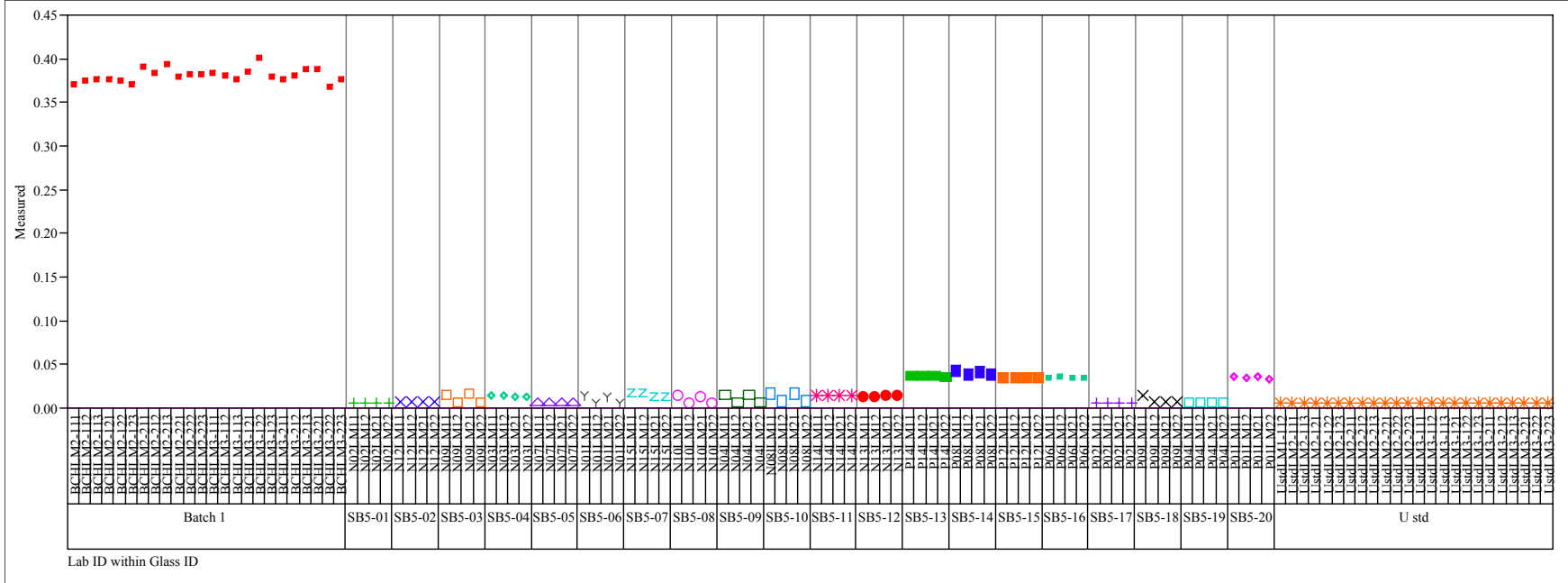


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Fe2O3 (wt%)

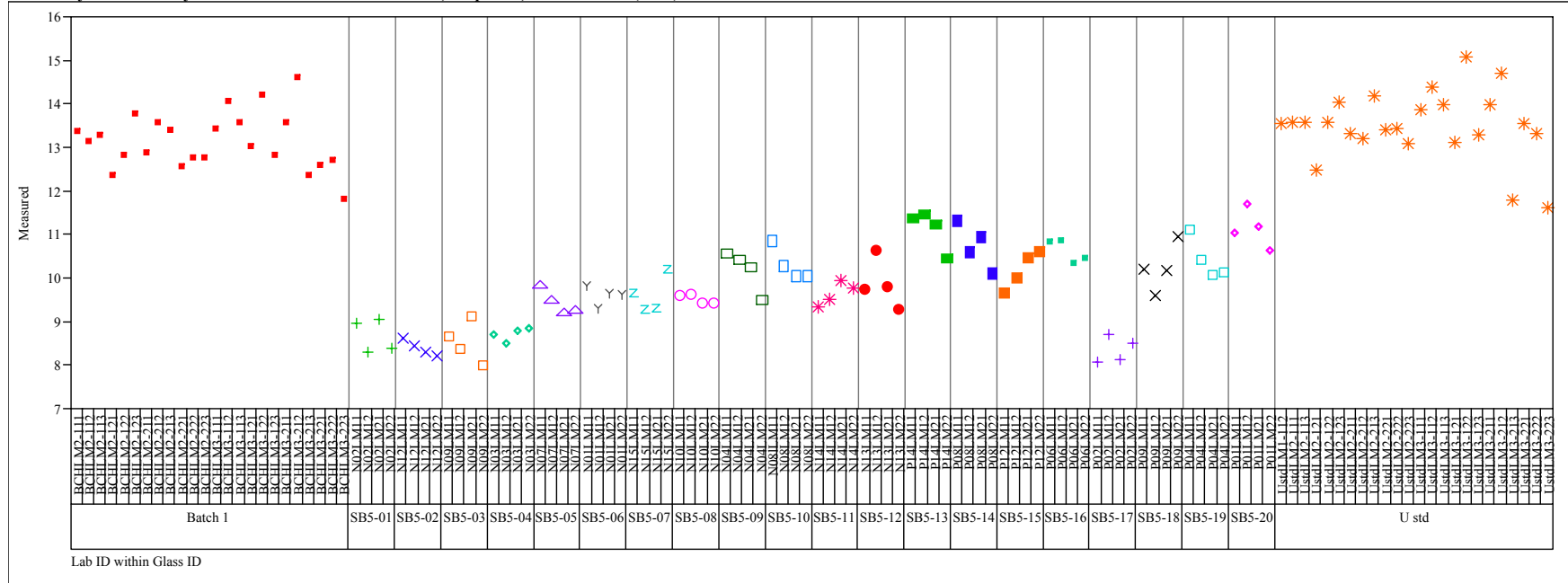


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=K2O (wt%)

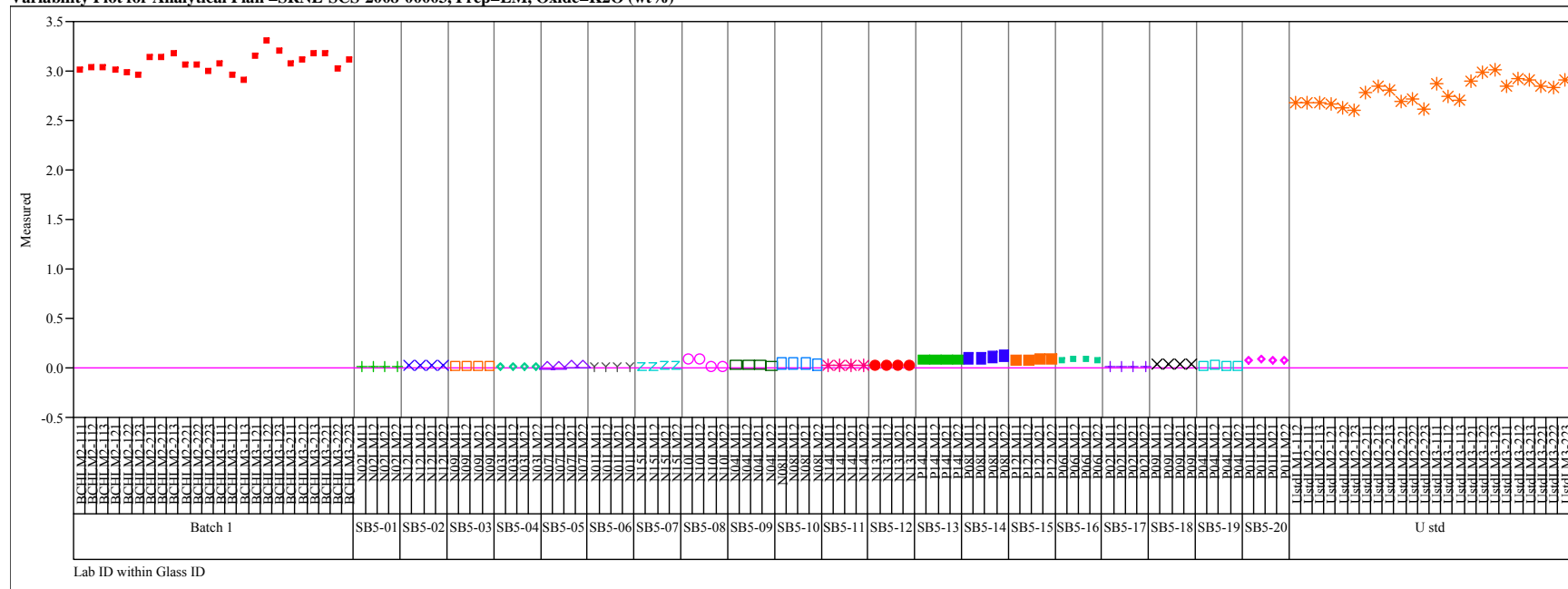


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=La2O3 (wt%)

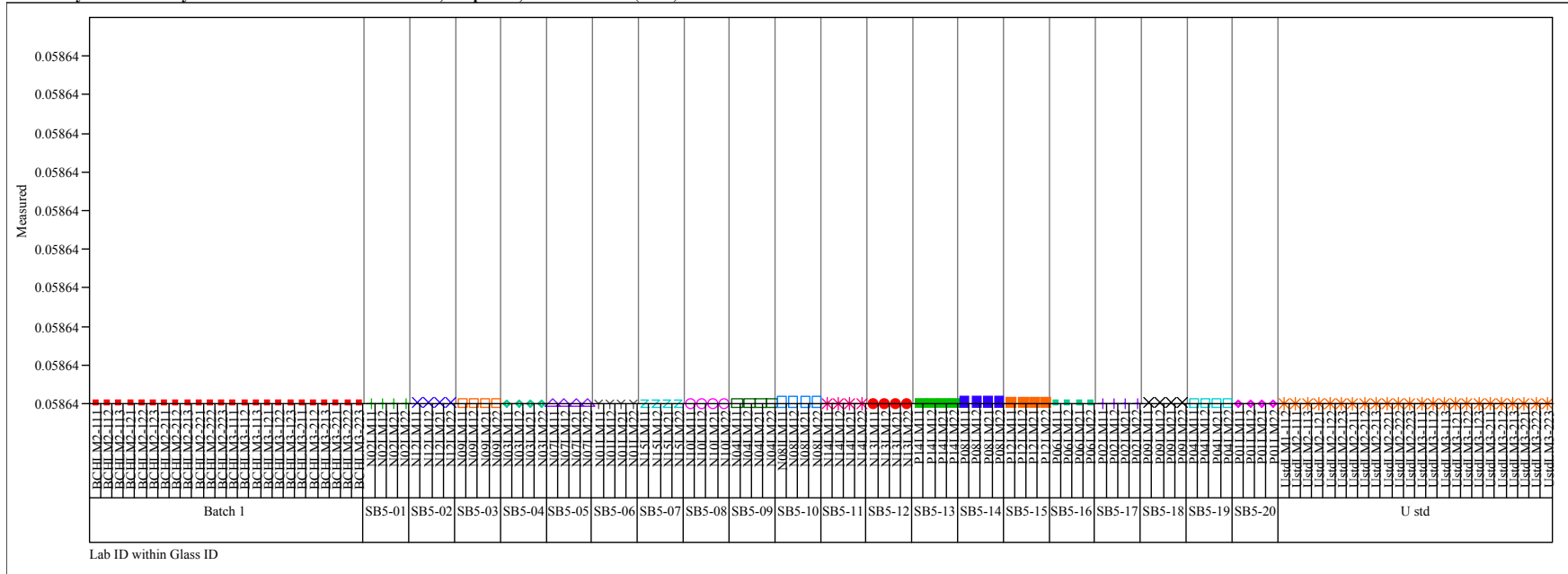


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=MgO (wt%)

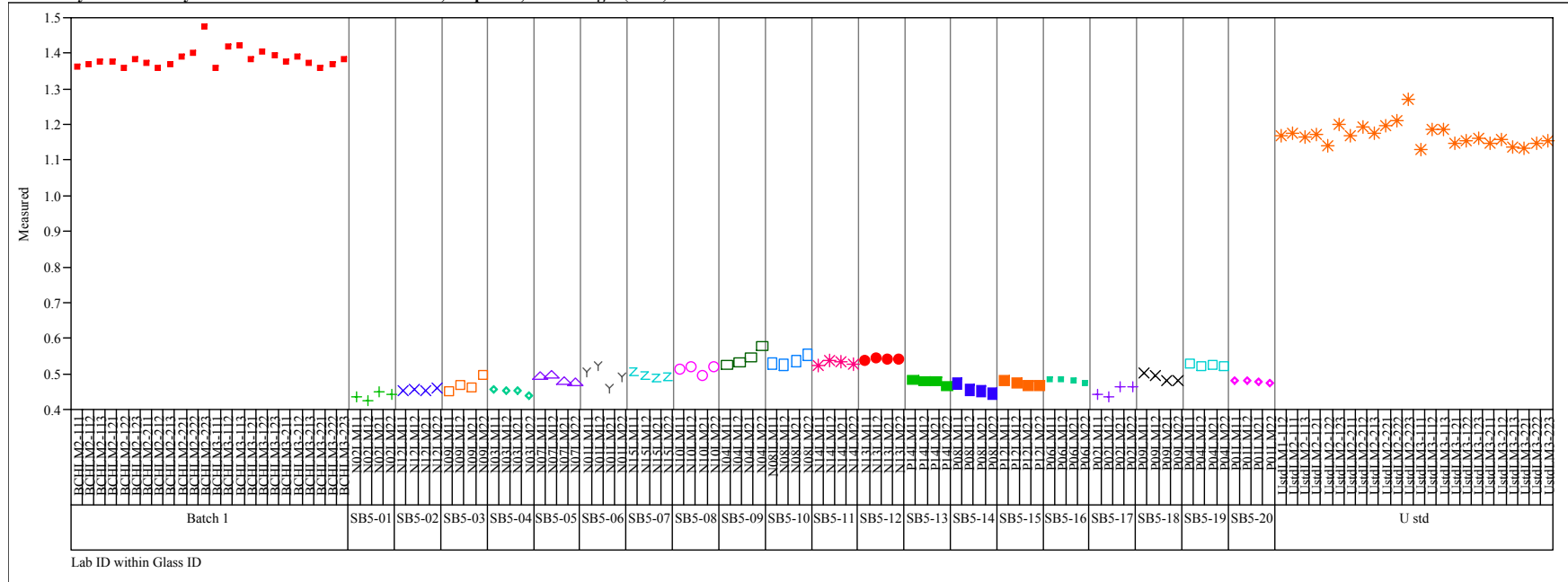


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Na2O (wt%)

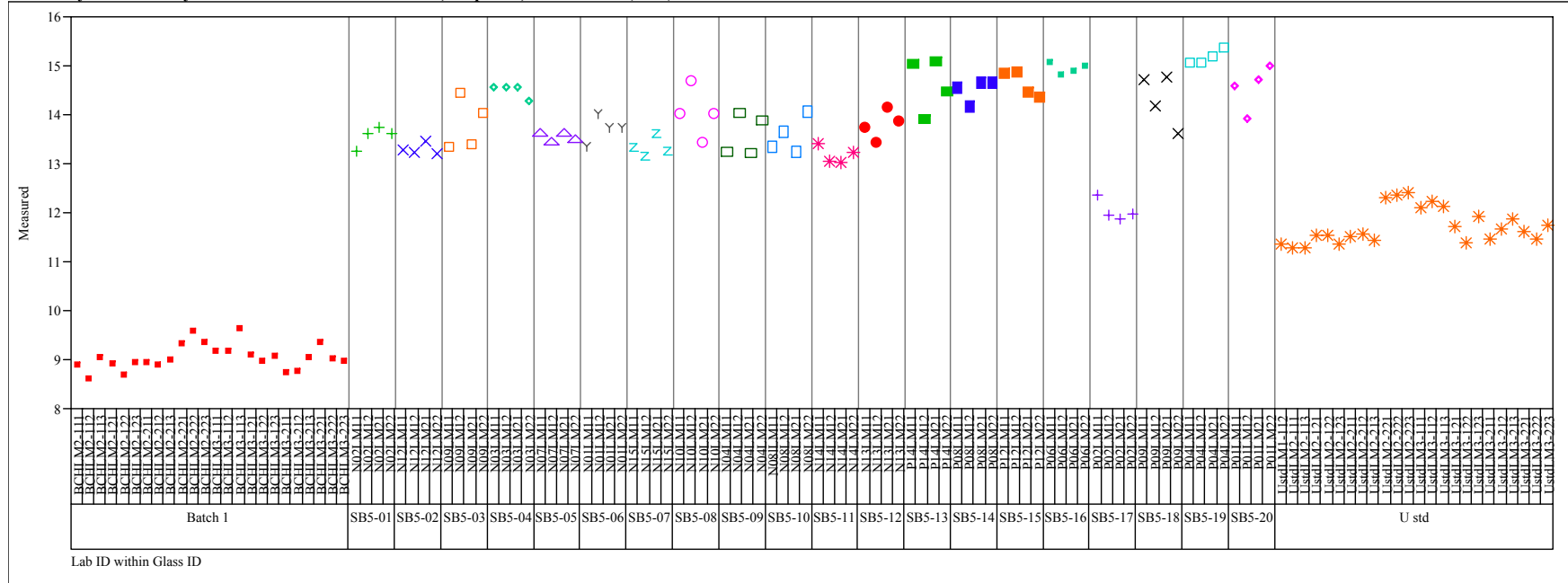


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Nb2O5 (wt%)

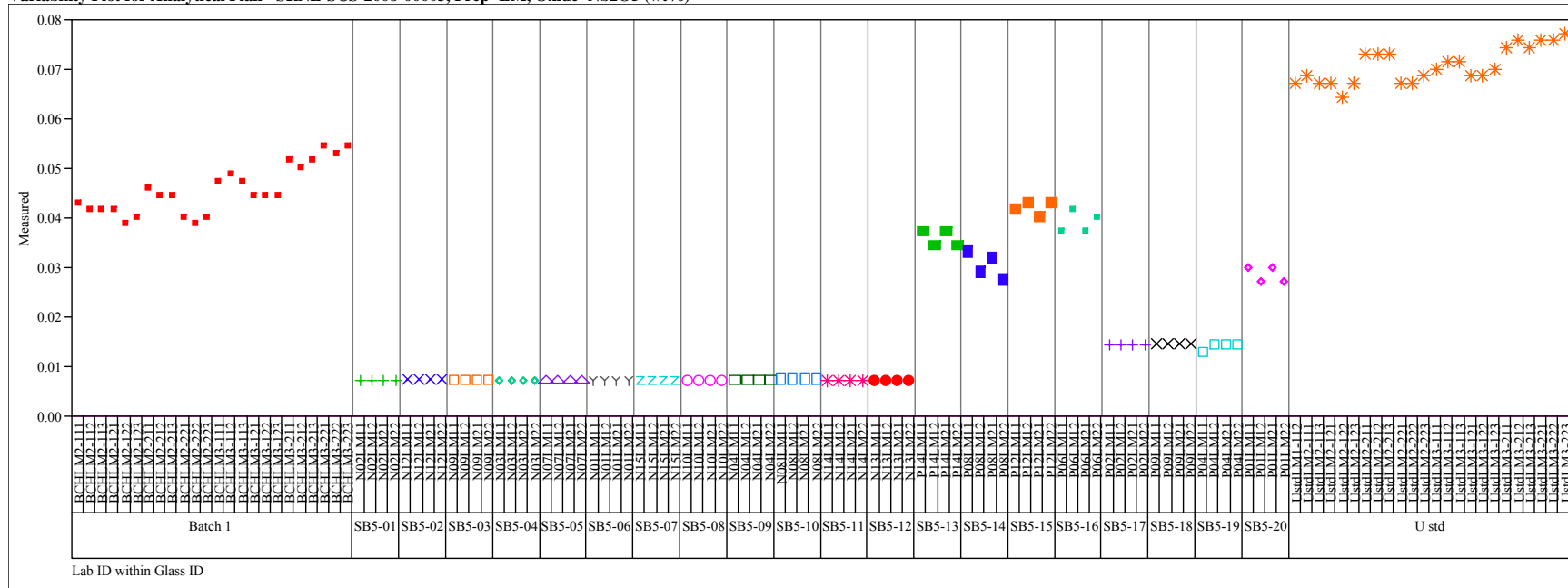


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=NiO (wt%)

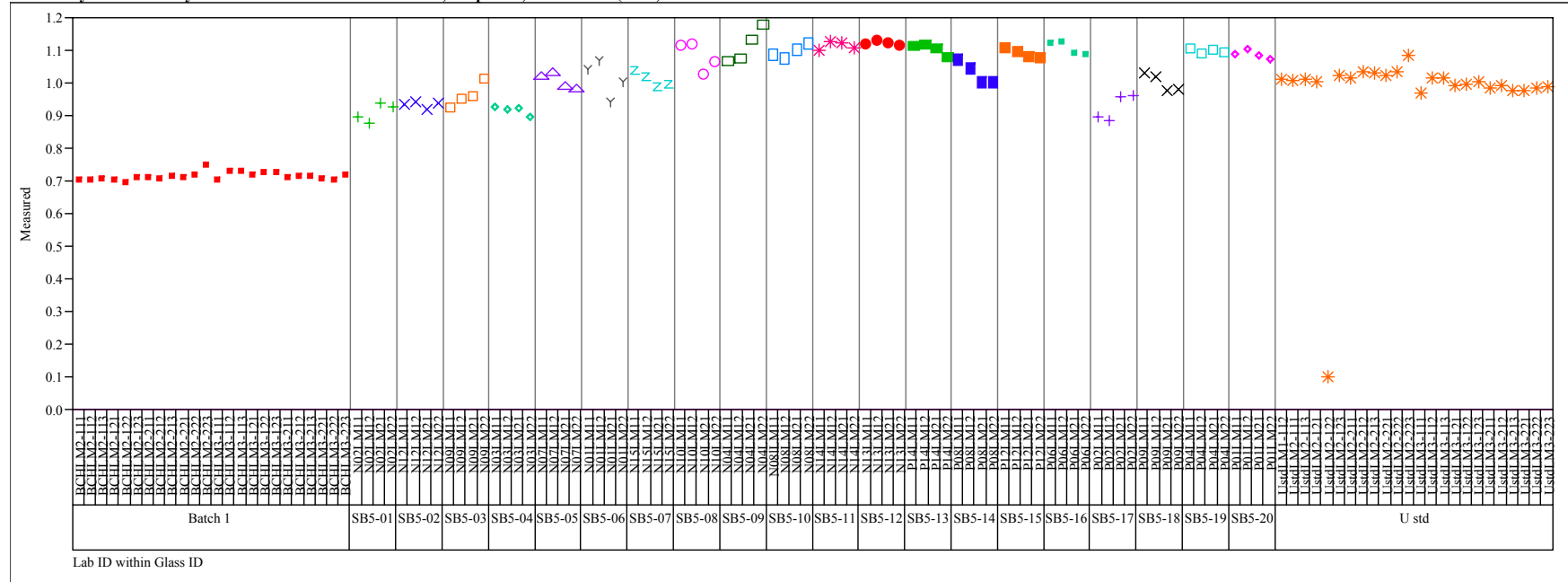


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=PbO (wt%)

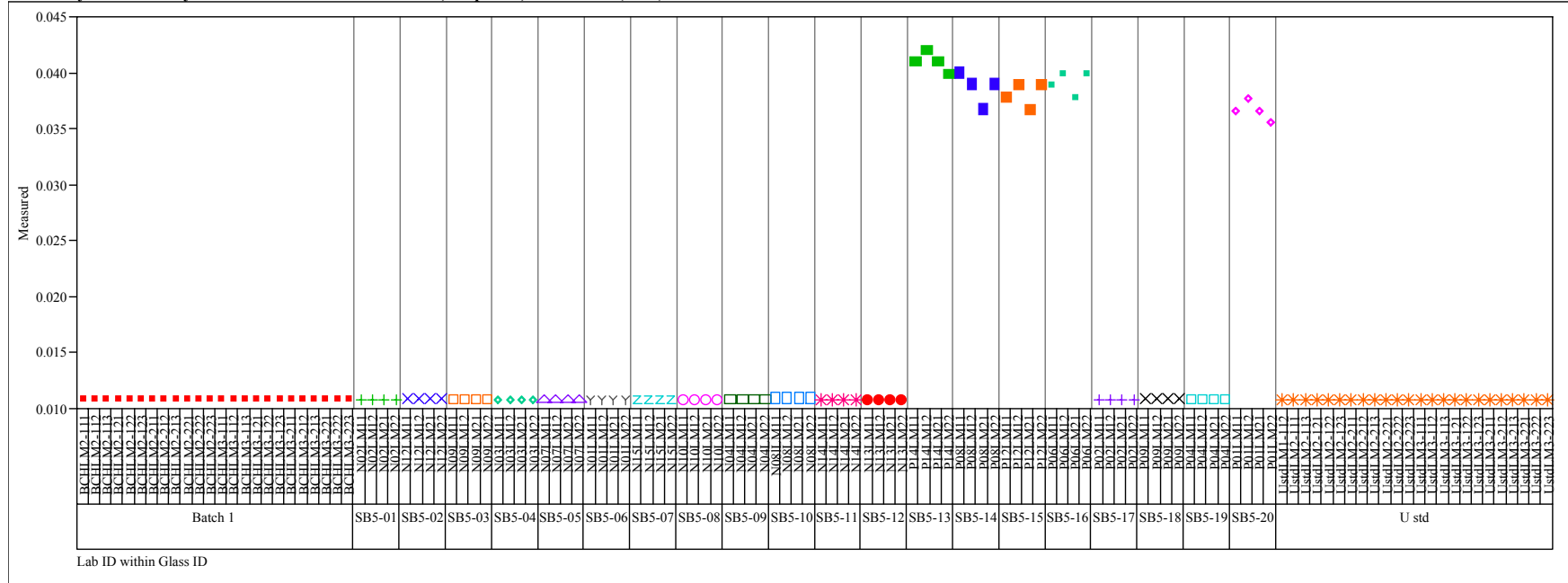


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=SiO2 (wt%)

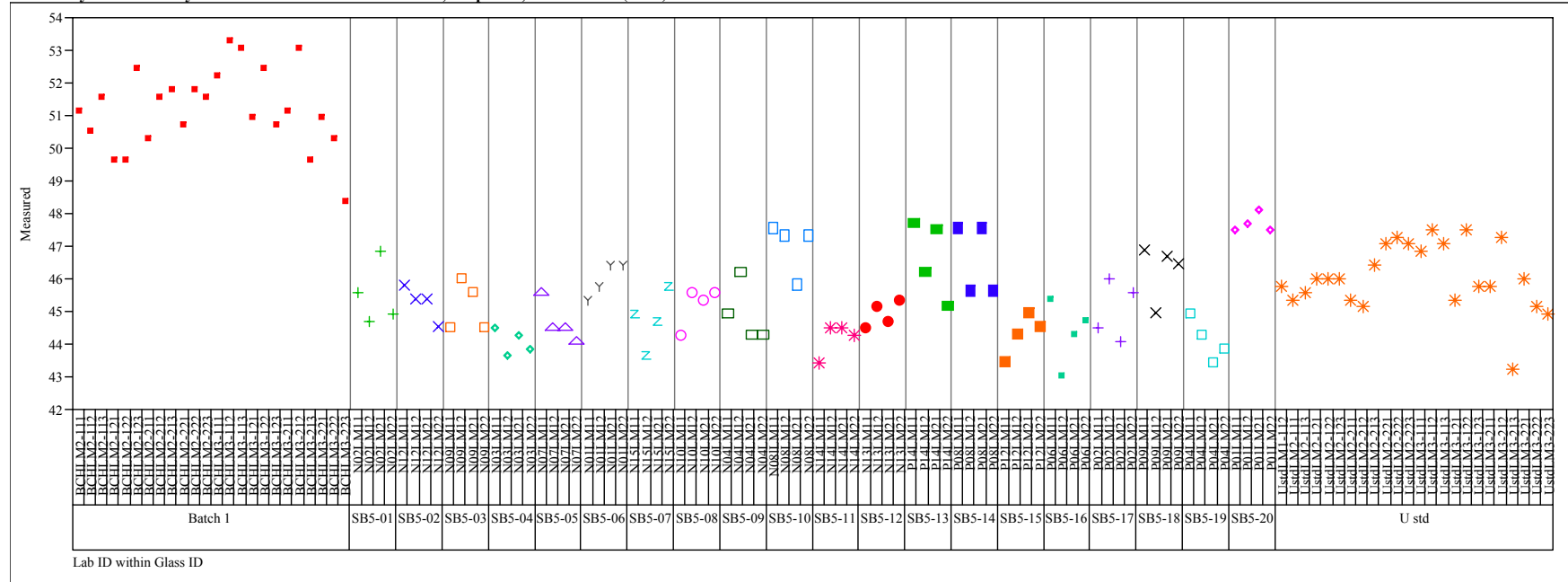


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=SO4 (wt%)

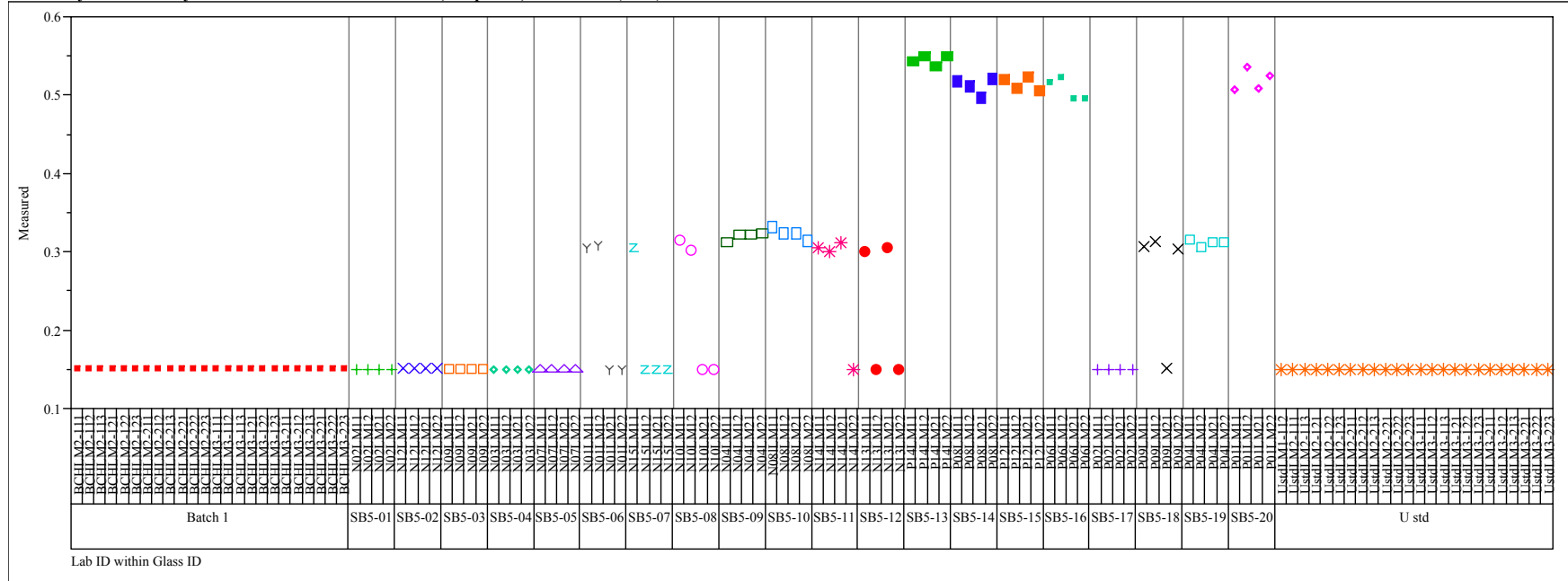


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=TiO2 (wt%)

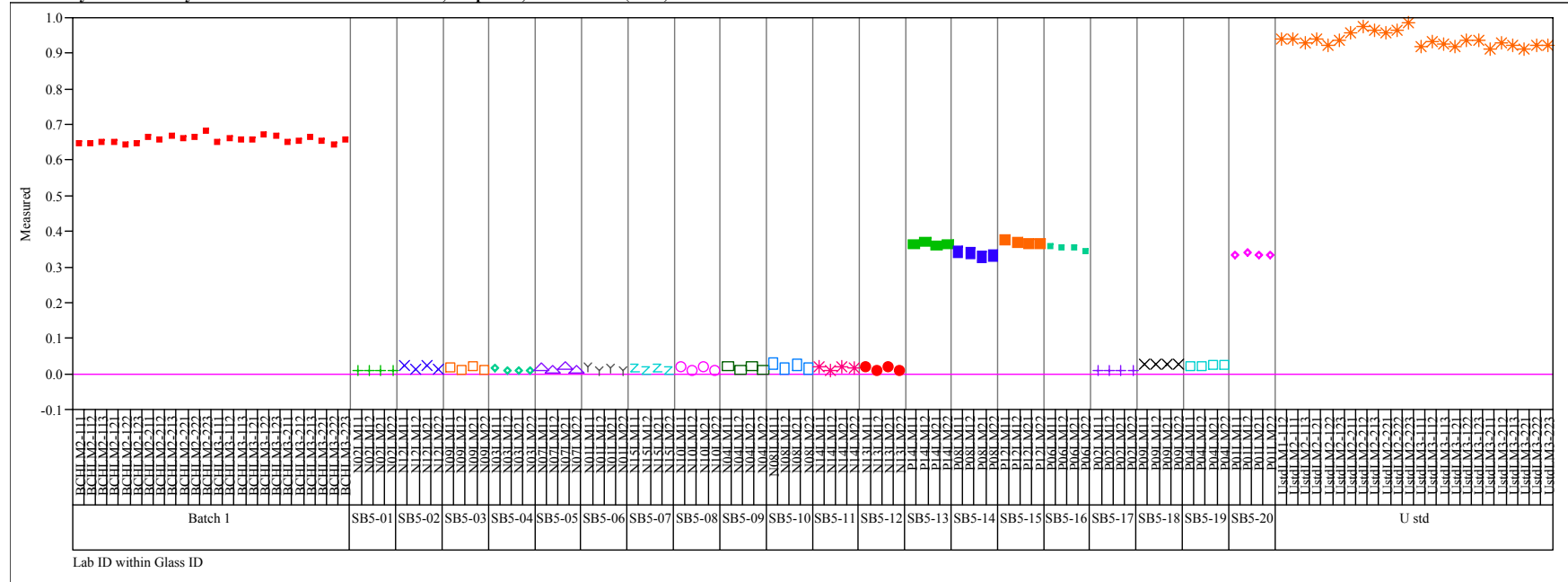


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=U3O8 (wt%)

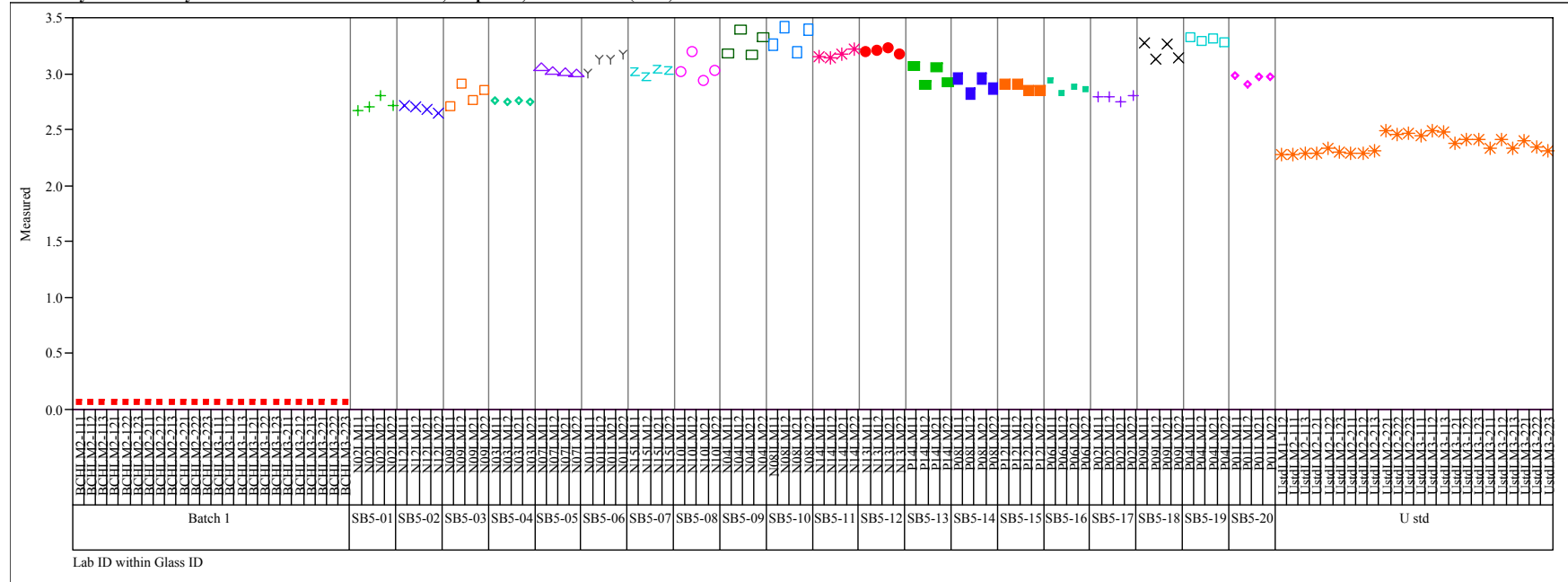


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=ZrO2 (wt%)

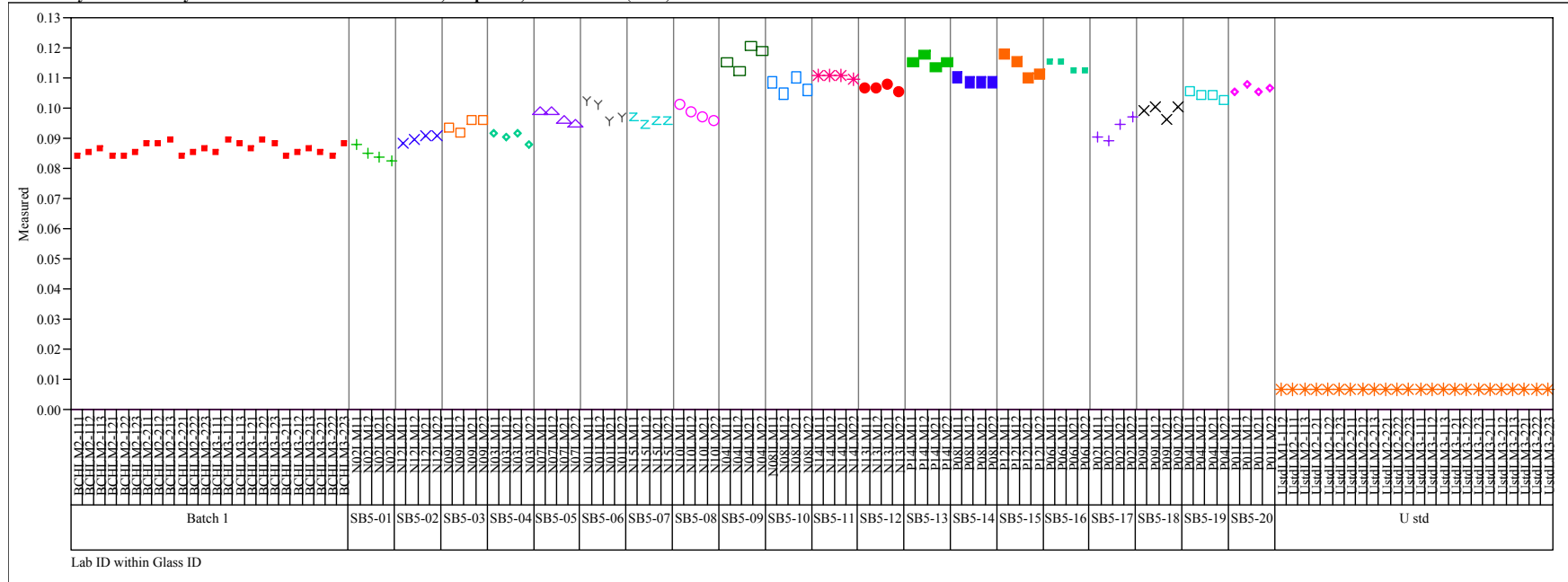


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00003, Prep=PF, Oxide=B2O3 (wt%)

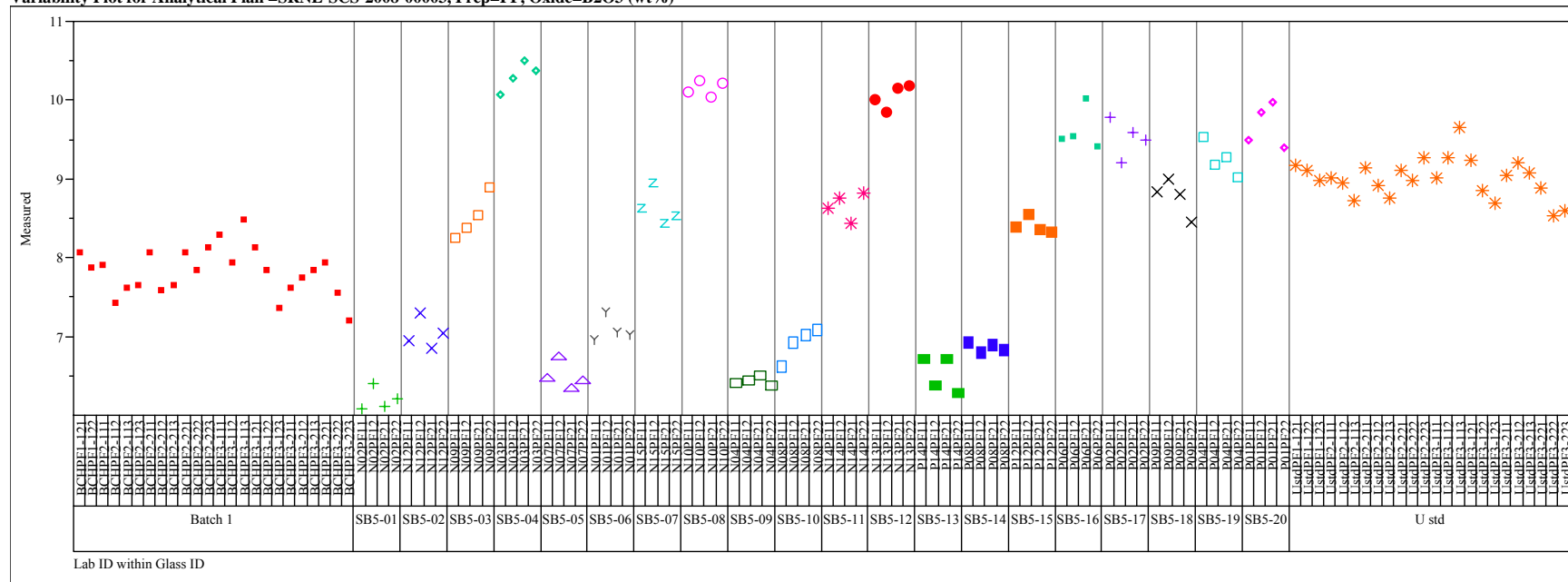


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

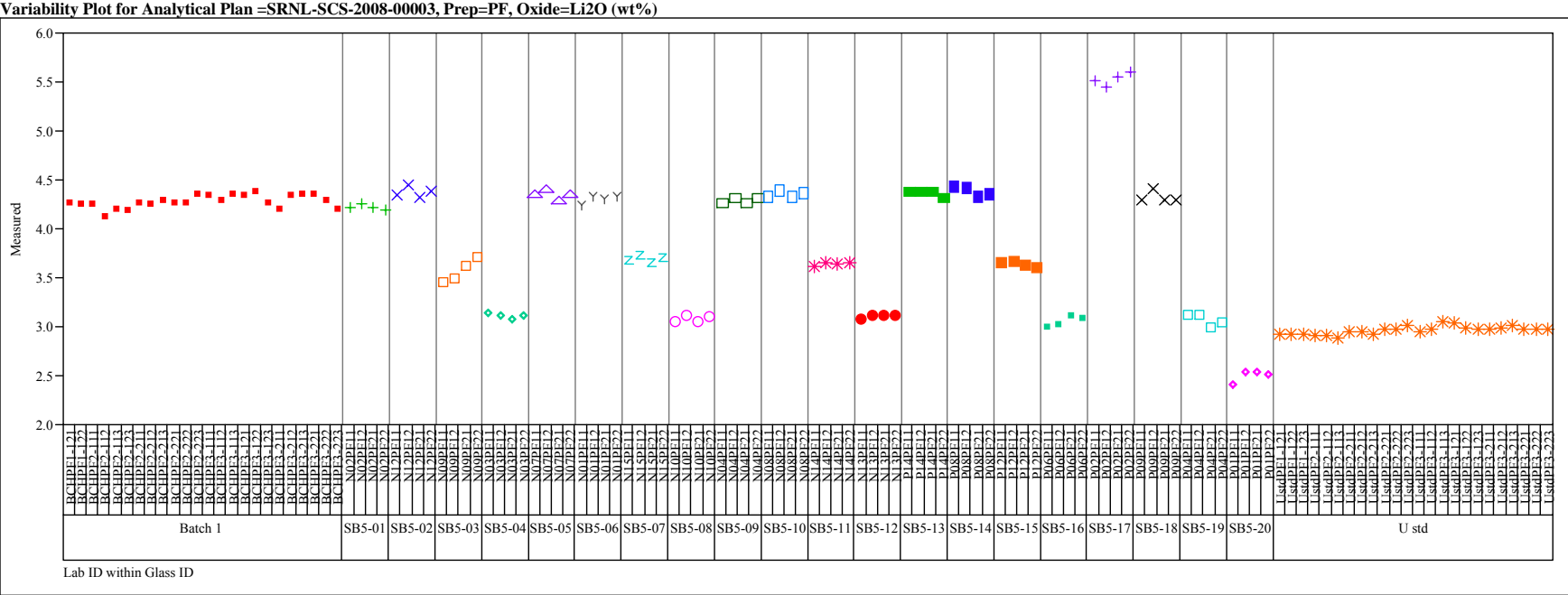


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Al2O3 (wt%)

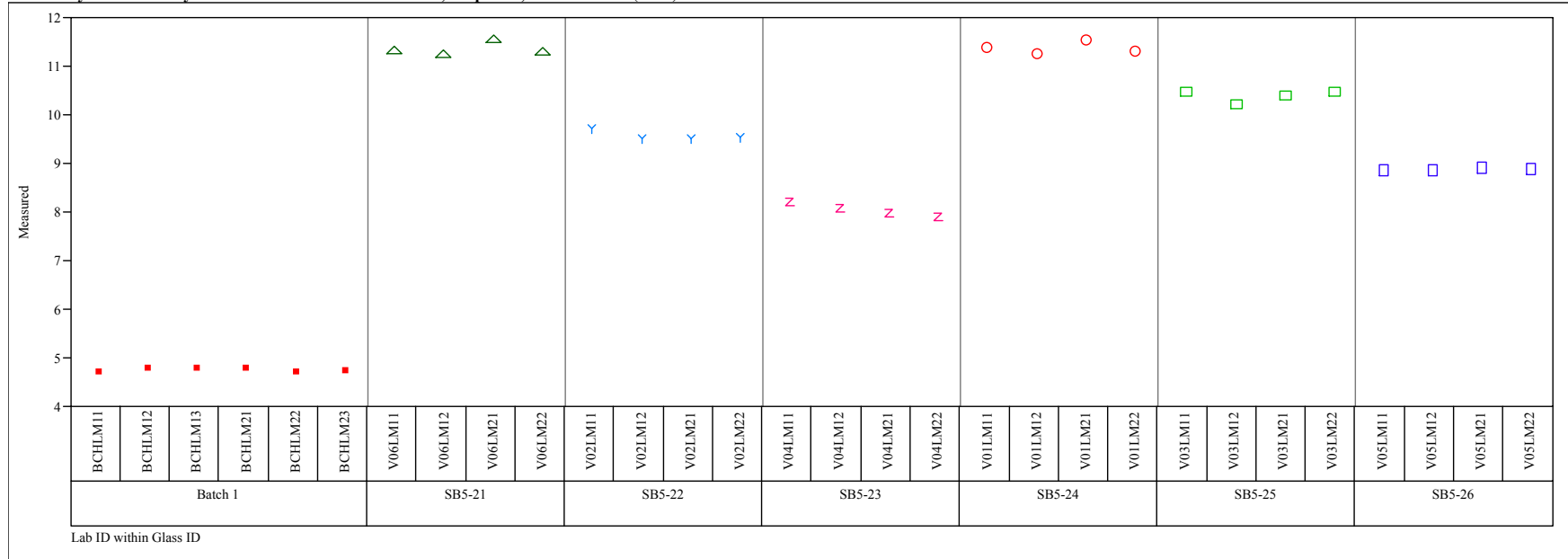


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=BaO (wt%)

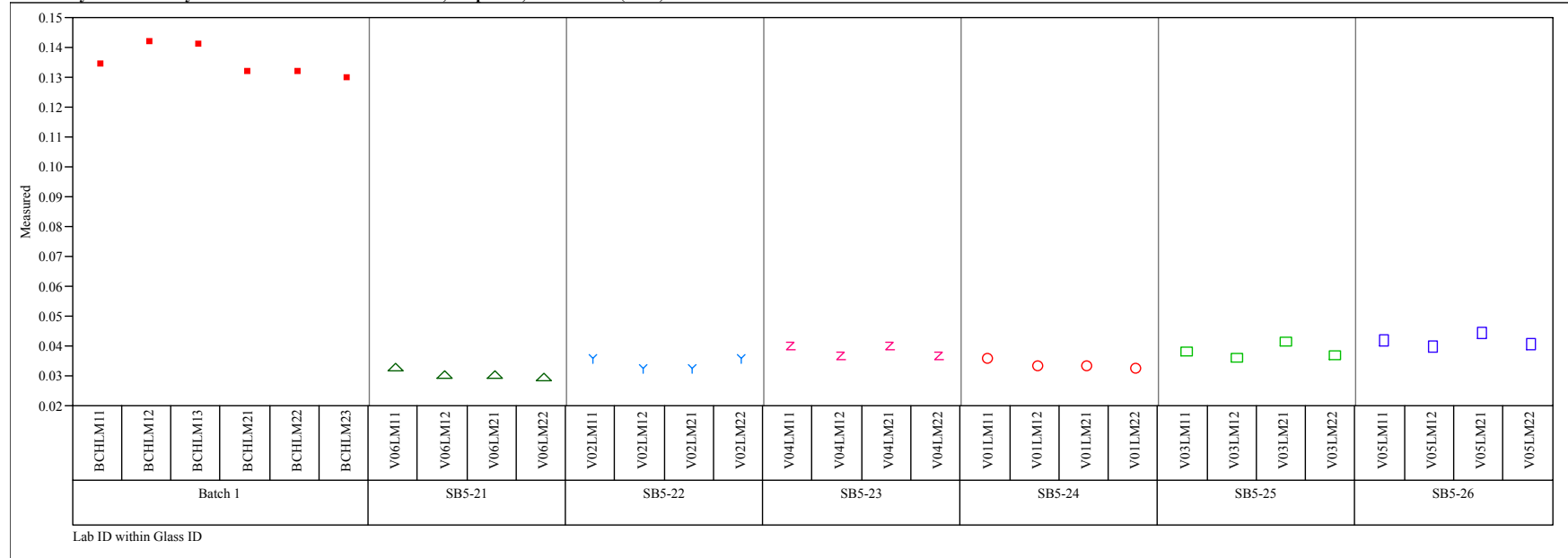


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=CaO (wt%)

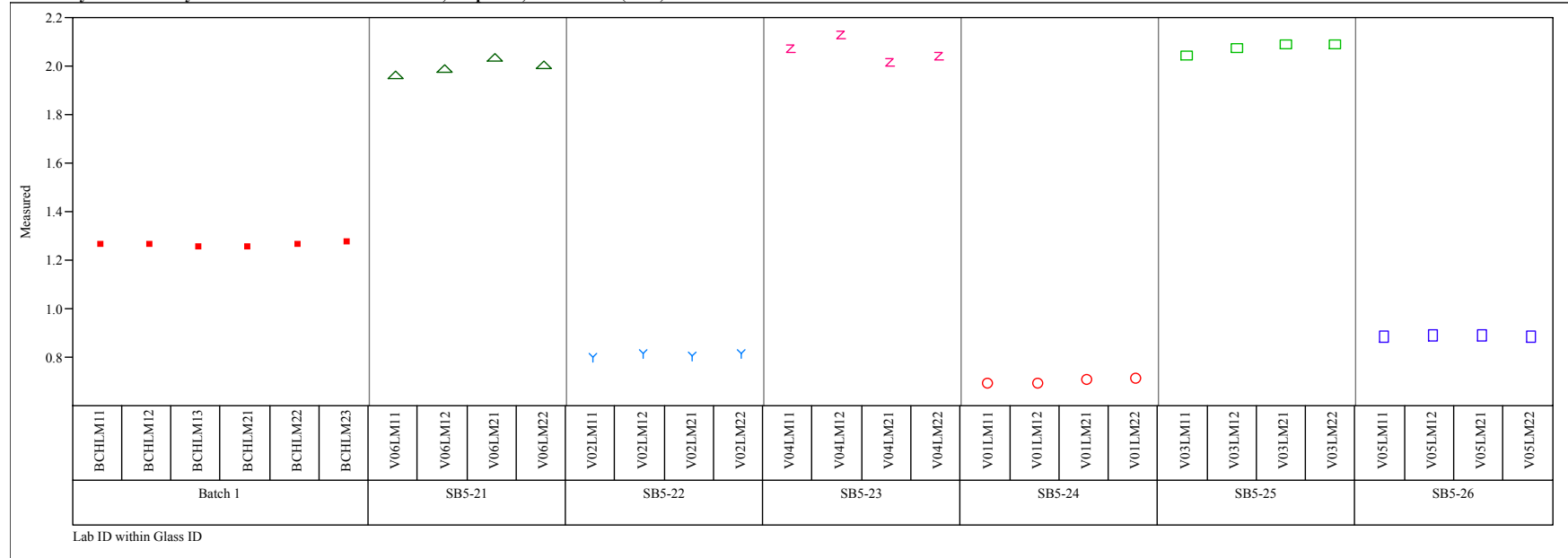


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Ce2O3 (wt%)

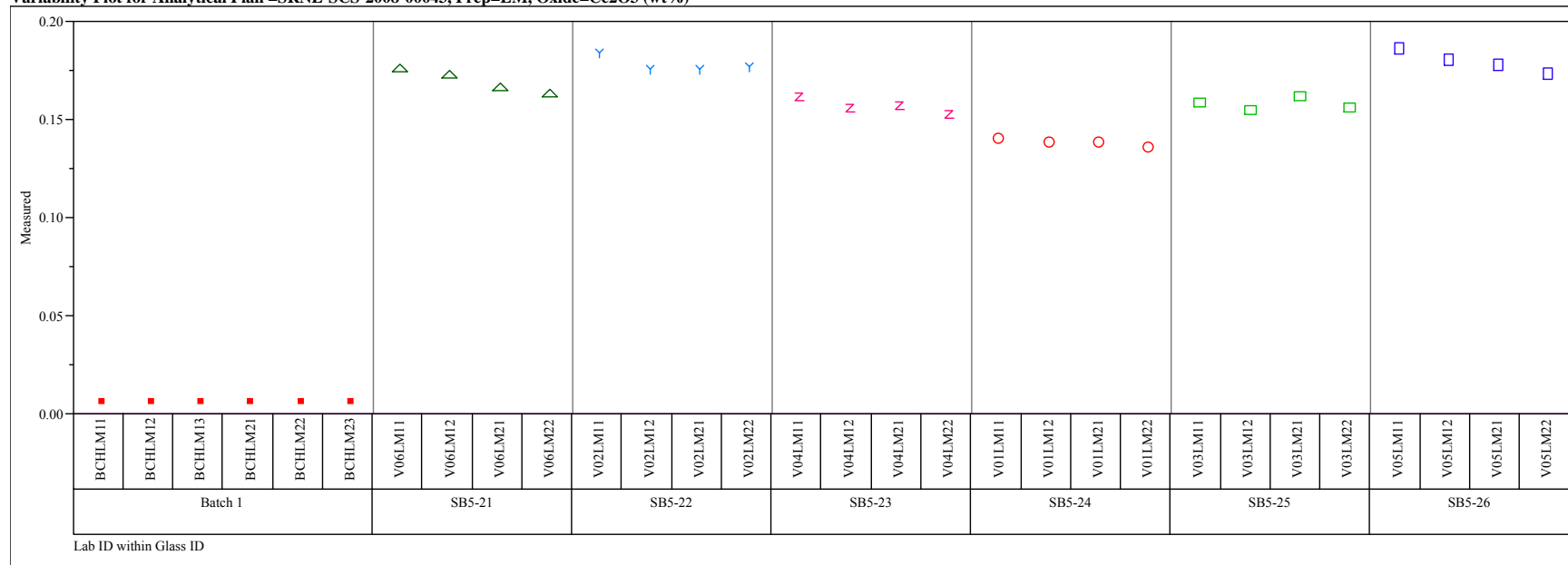


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Cr2O3 (wt%)

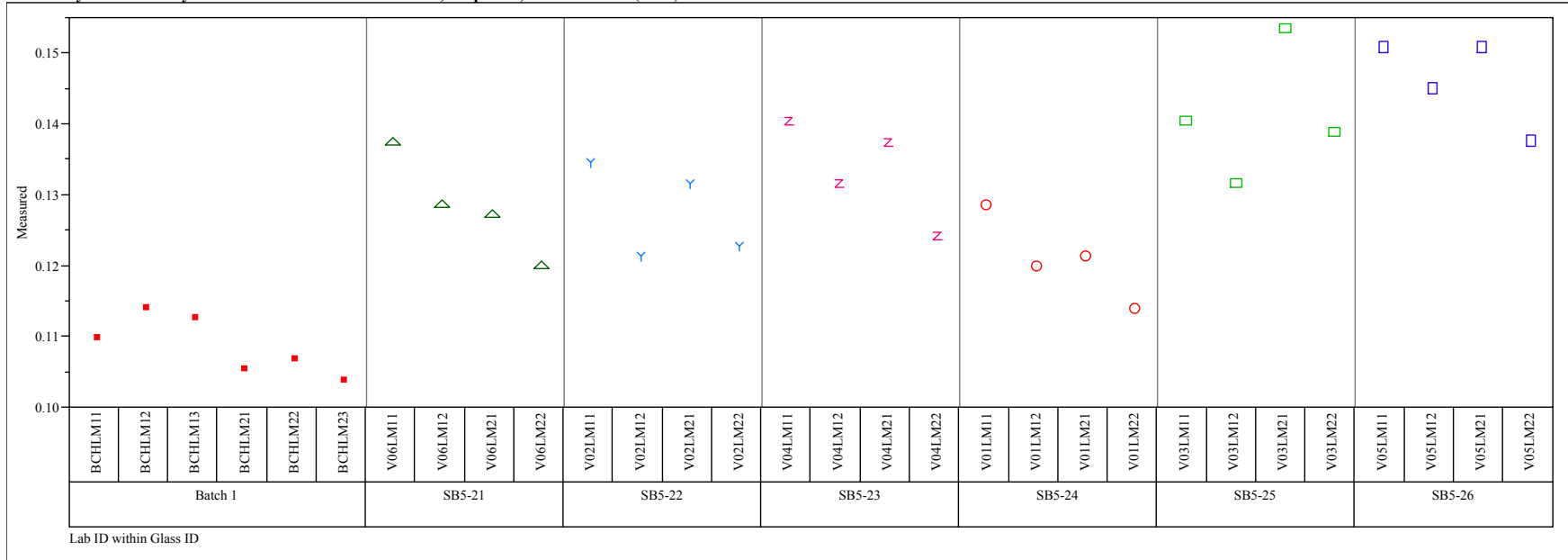


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Fe2O3 (wt%)

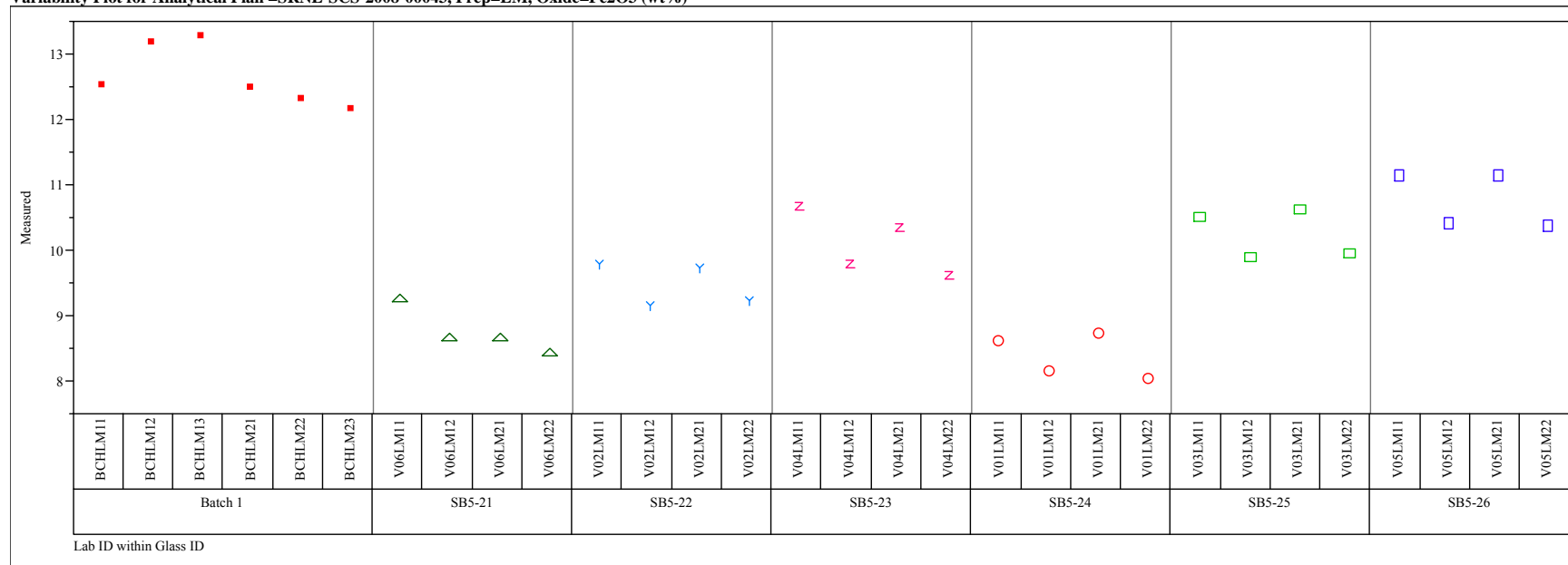


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=HfO2 (wt%)

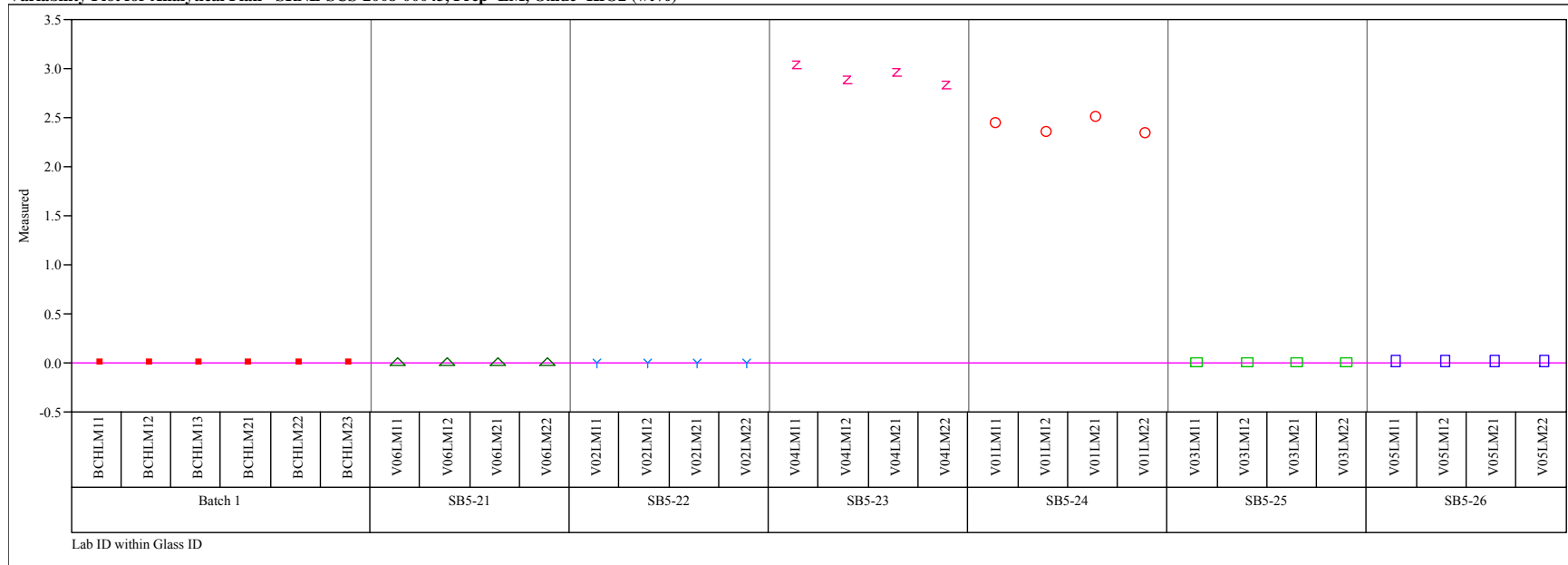


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=K2O (wt%)

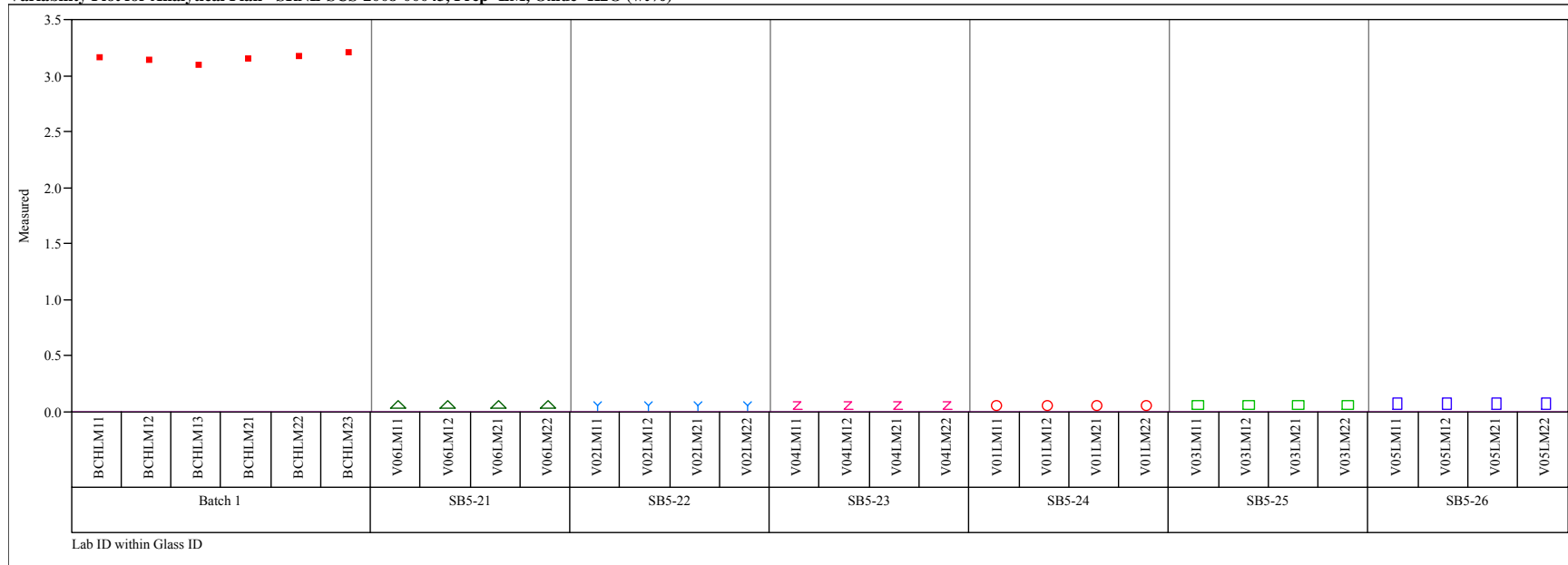


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=La2O3 (wt%)

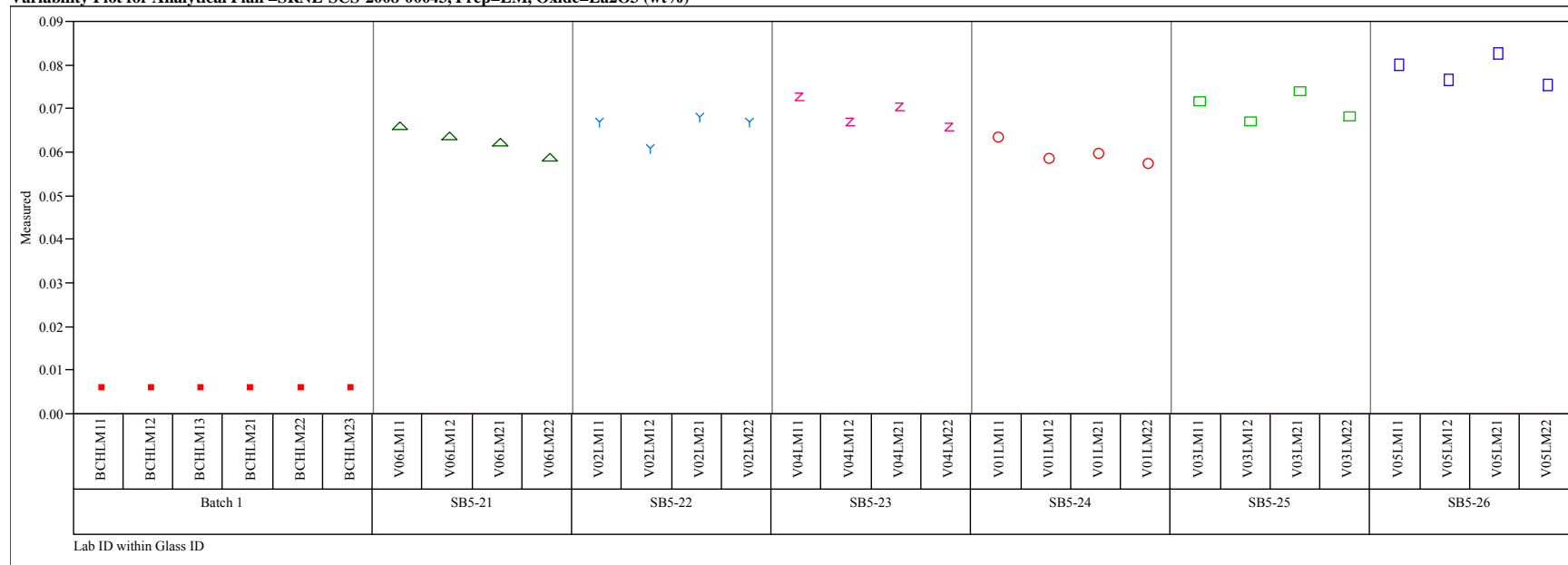


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=MgO (wt%)

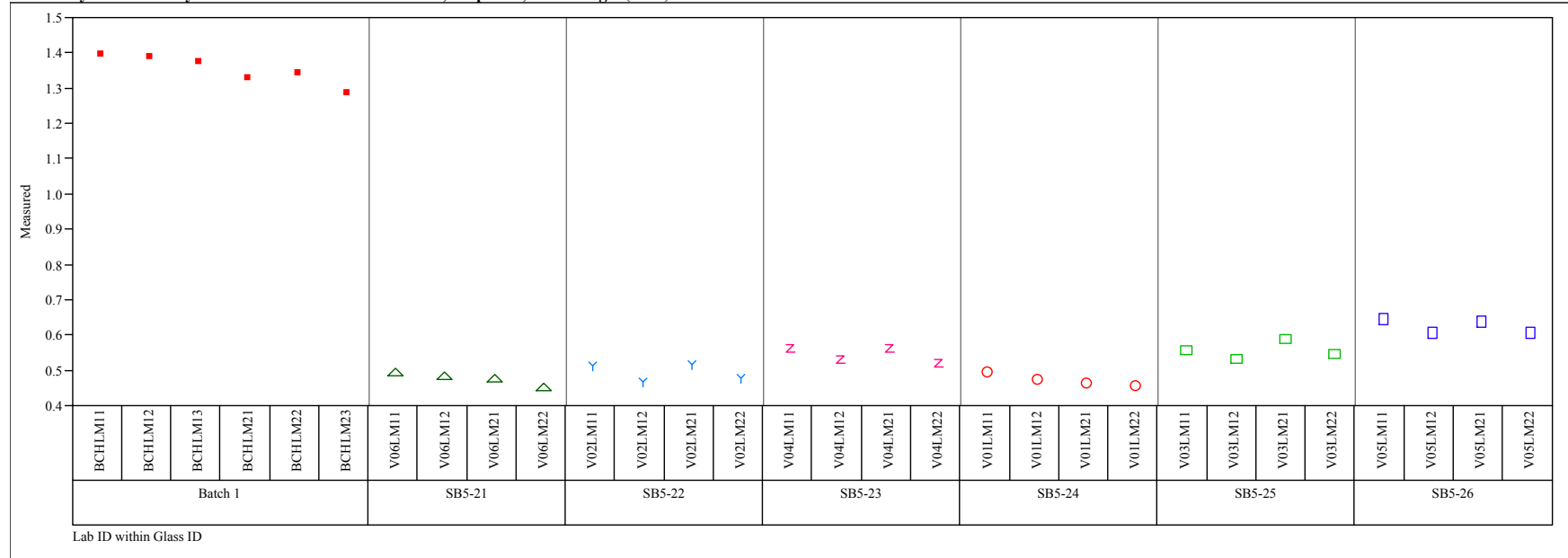


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=MnO (wt%)

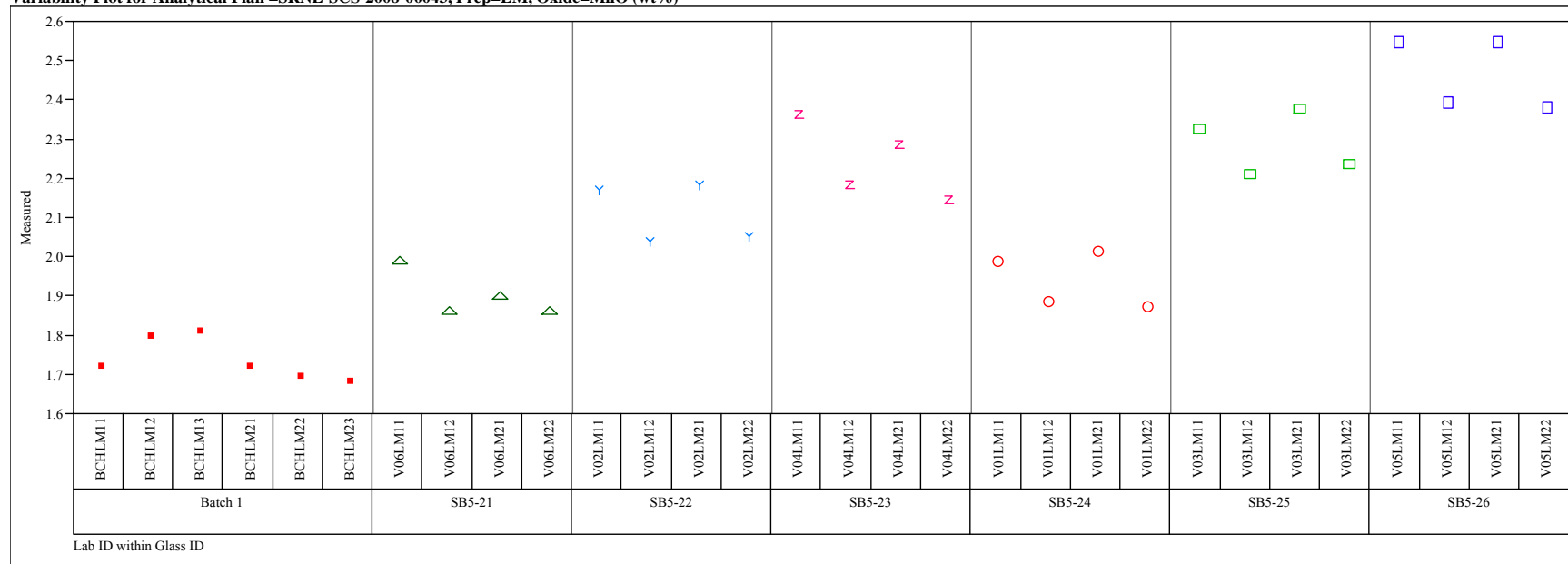


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Na2O (wt%)

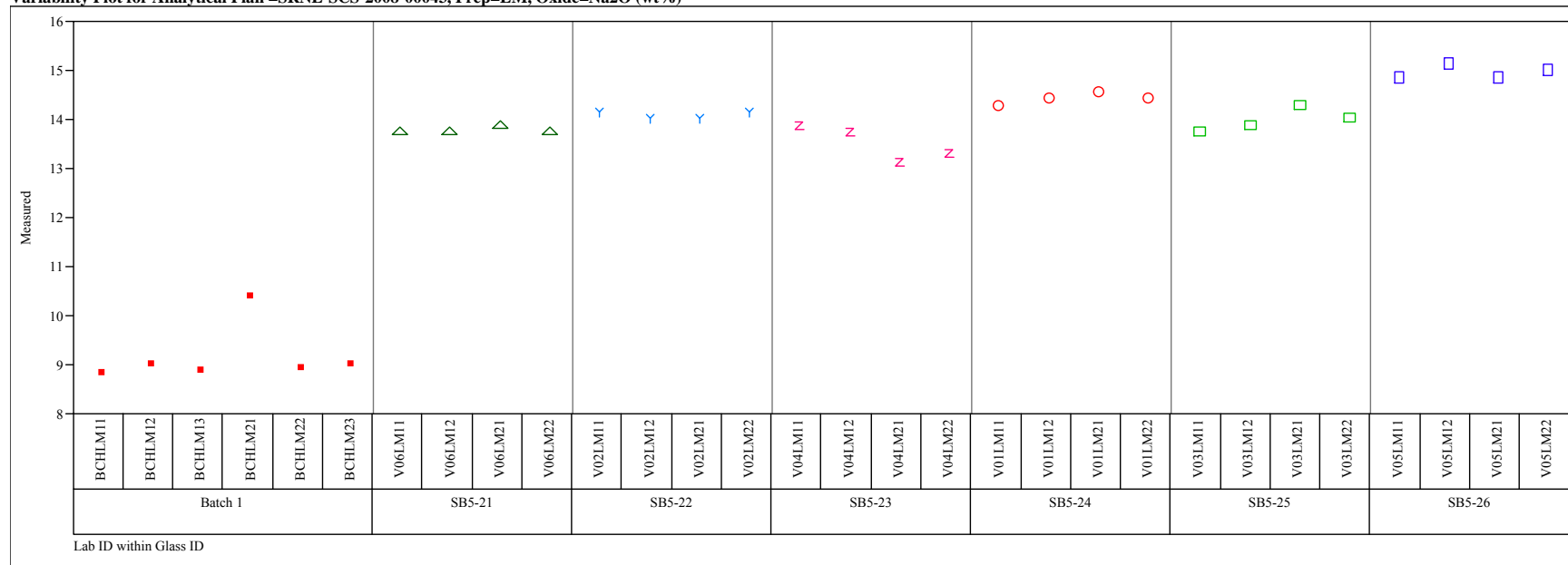


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Nd2O3 (wt%)

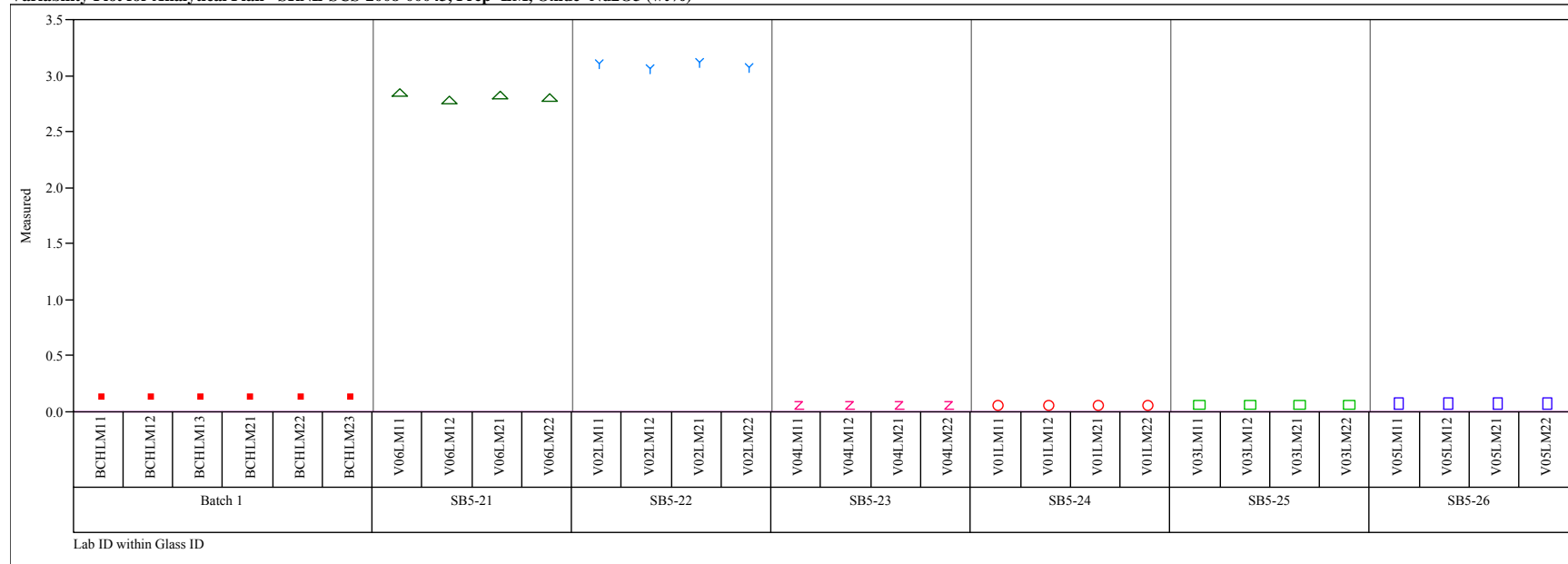


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=NiO (wt%)

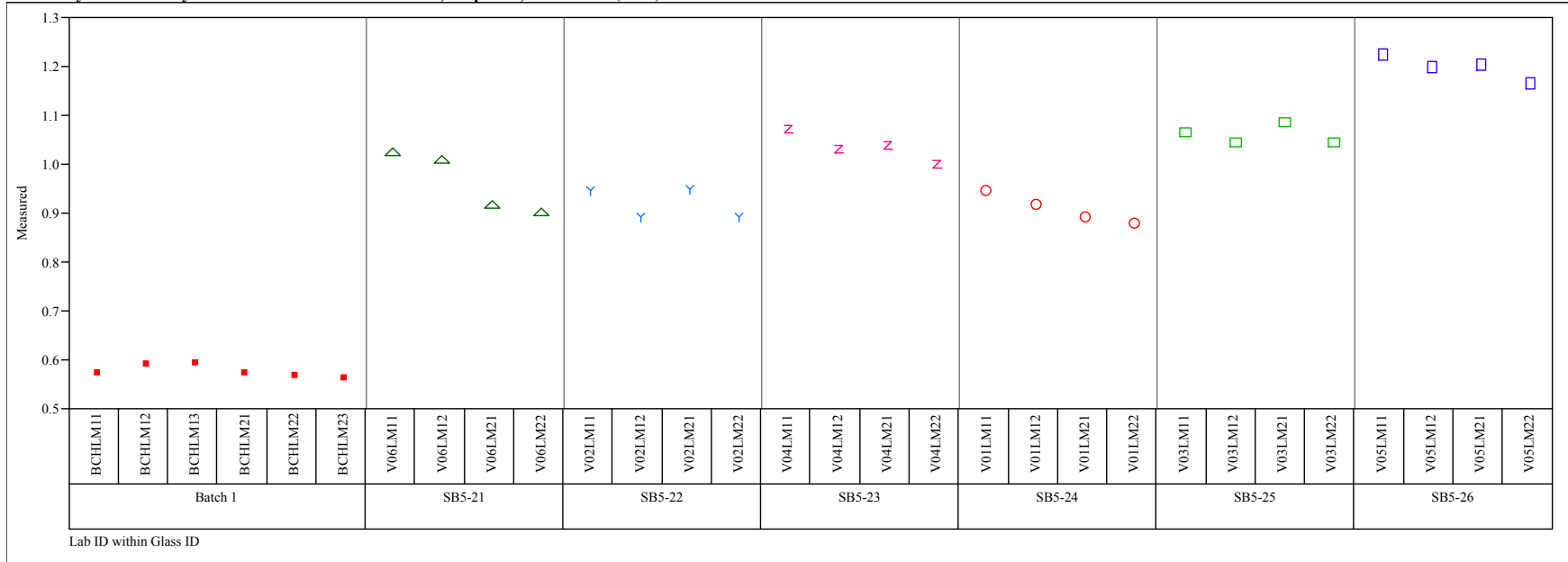


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=PbO (wt%)

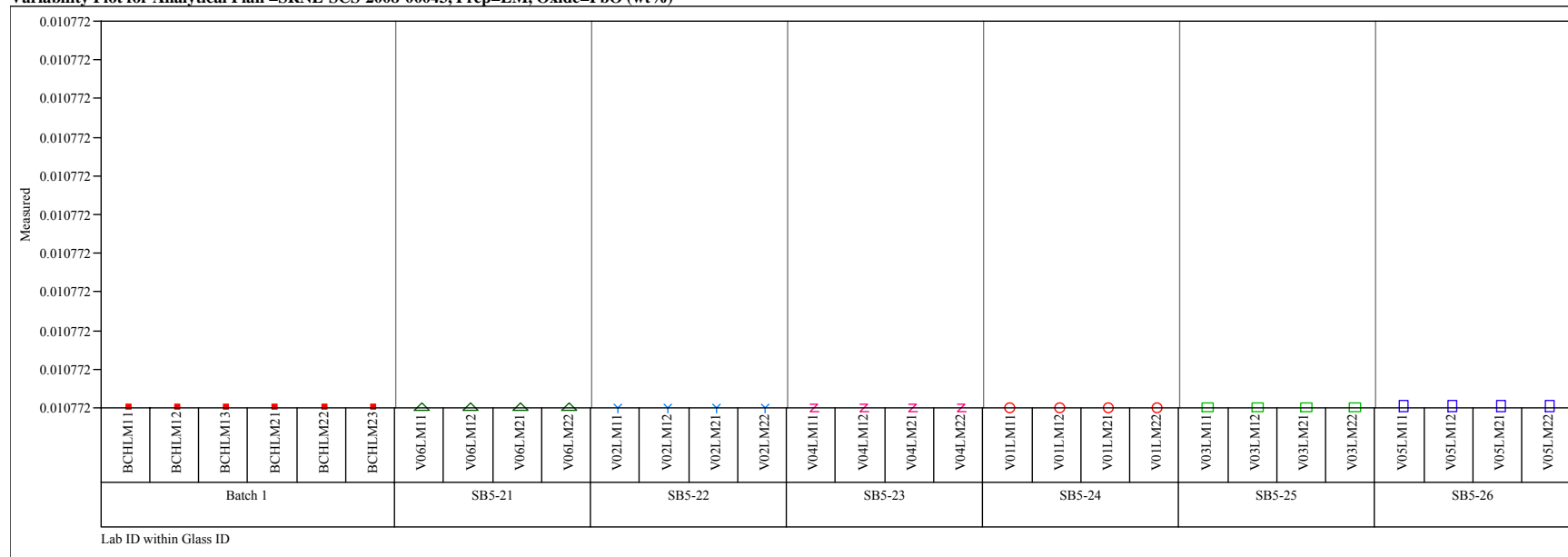


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=SiO2 (wt%)

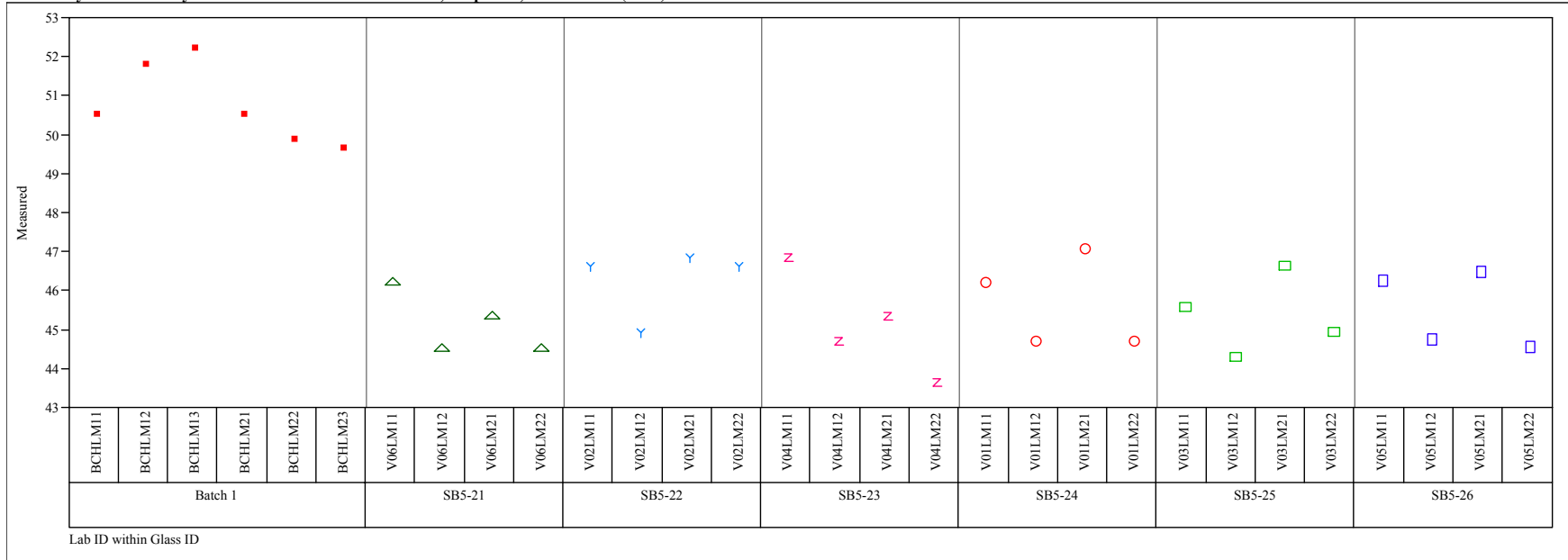


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=SO4 (wt%)

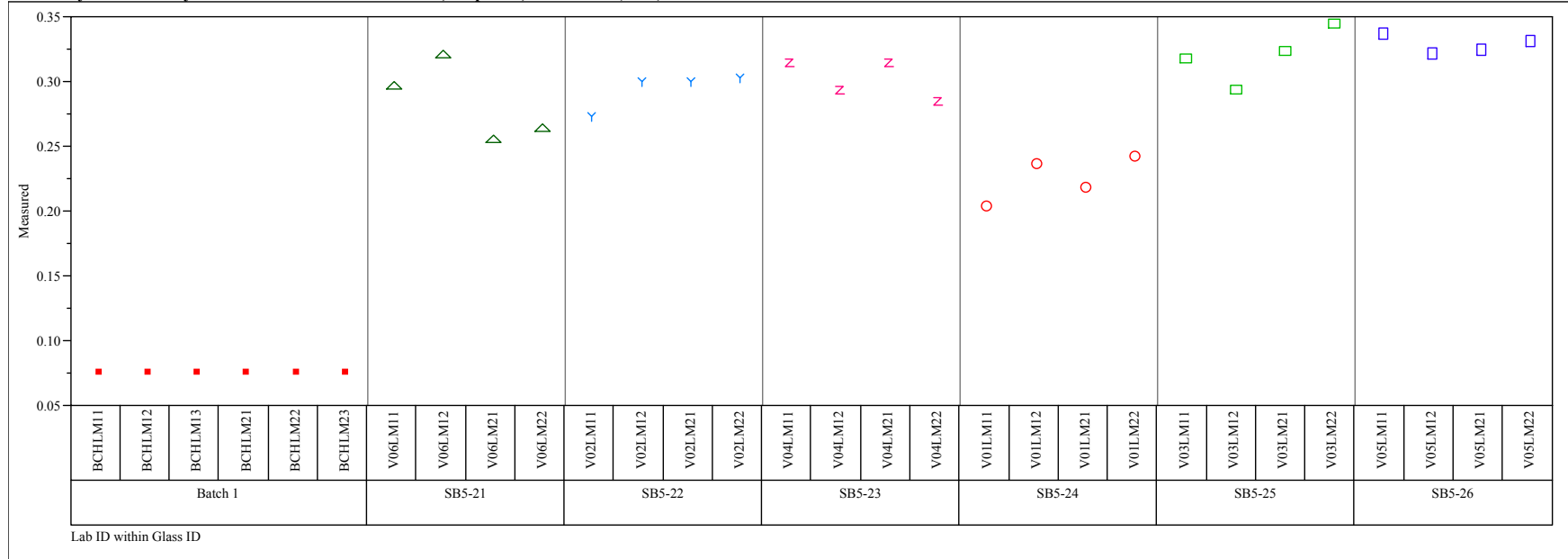


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=TiO2 (wt%)

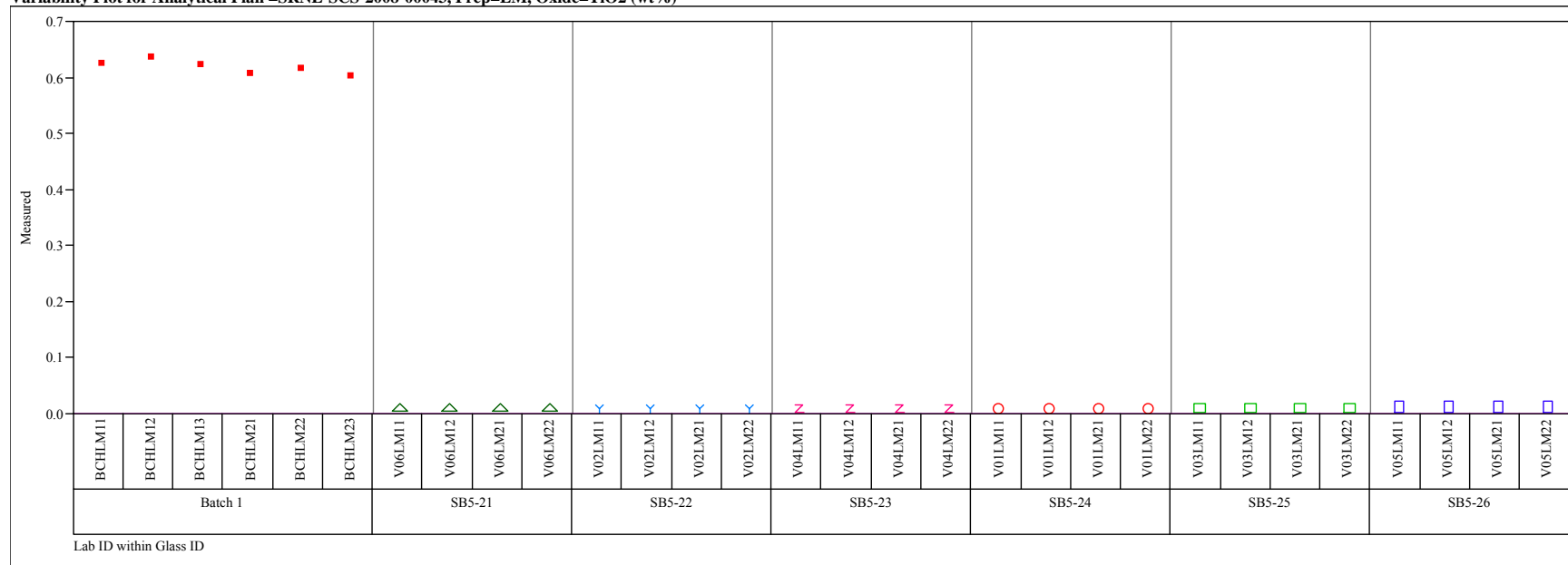


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=ZnO (wt%)

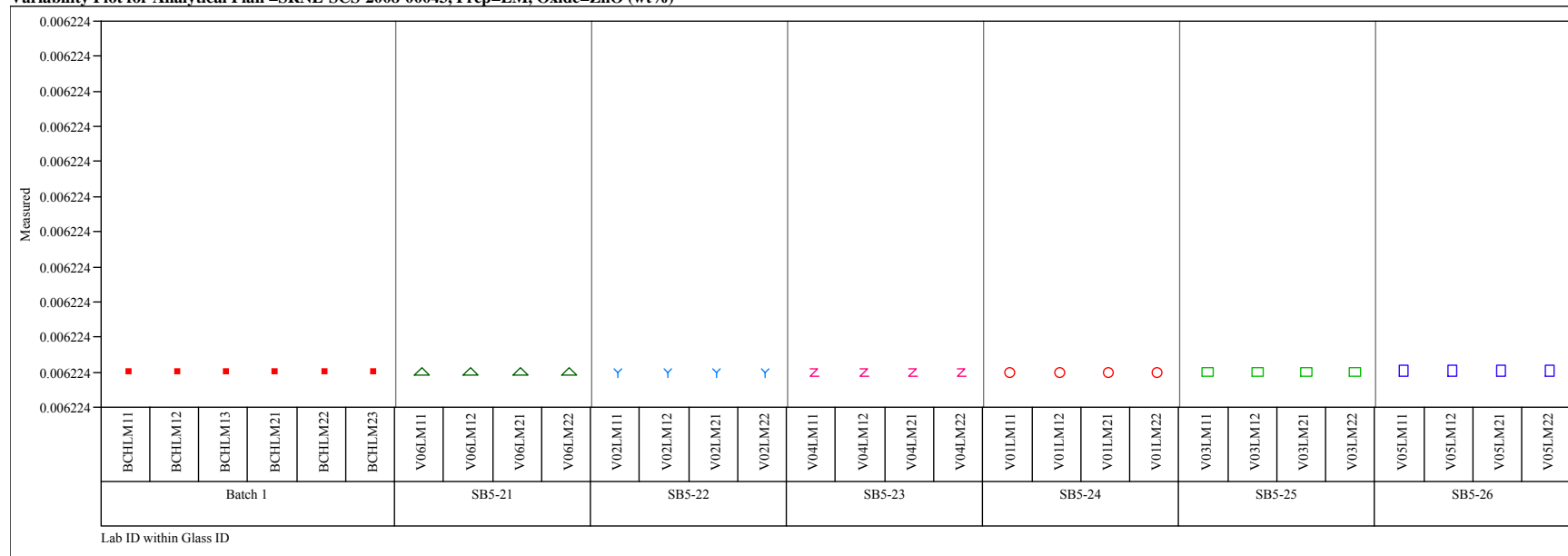


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=ZrO2 (wt%)

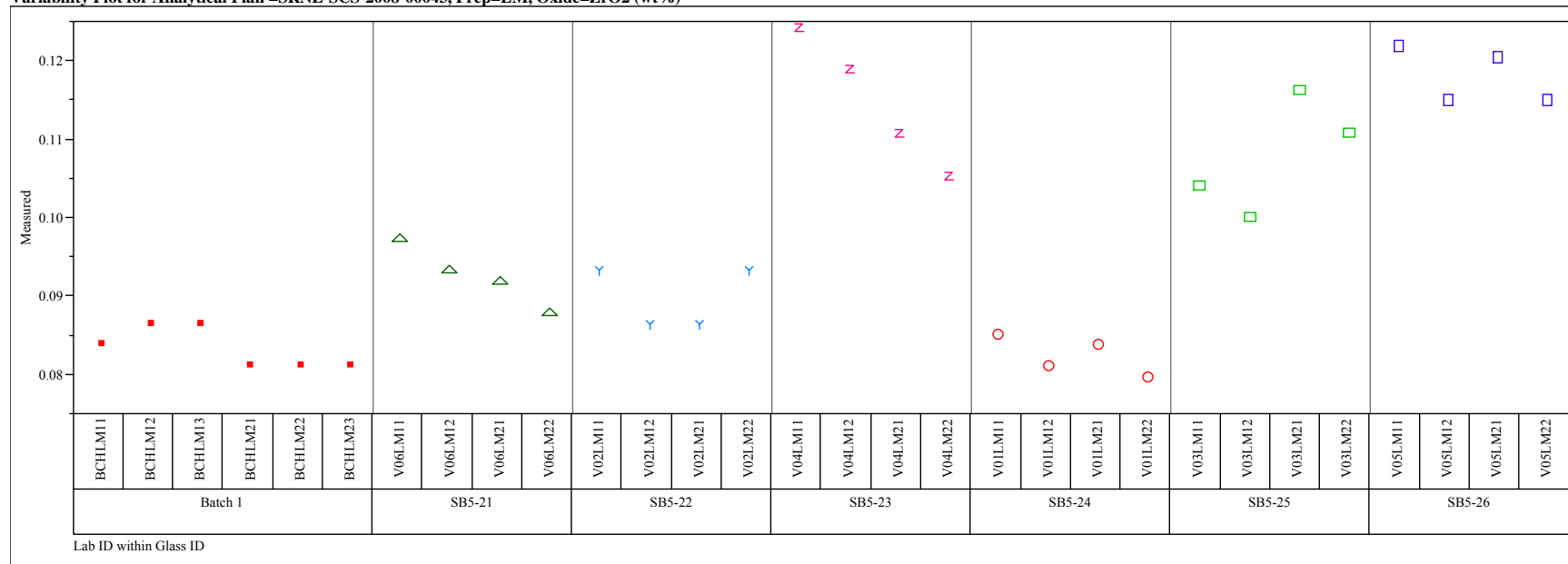


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=PF, Oxide=B2O3 (wt%)

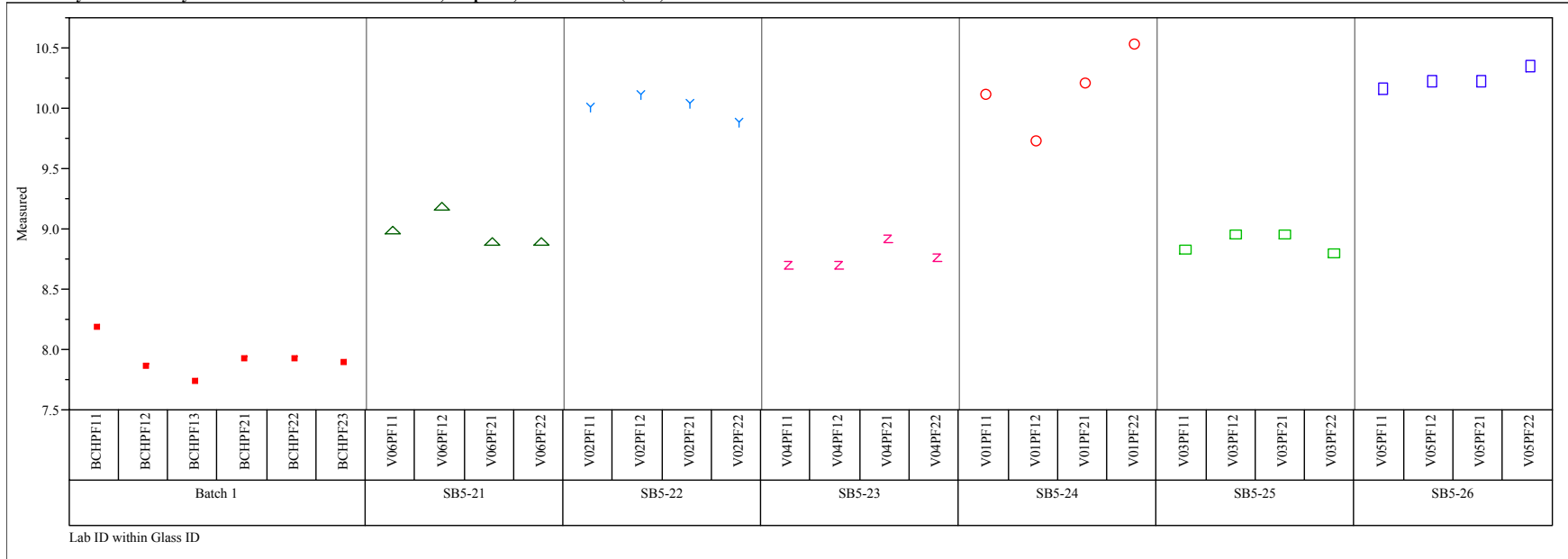


Exhibit A2. Oxide Measurements by Lab ID within Glass ID for Samples by Prep Method and Analytical Plan Memo. (continued)

Variability Plot for Analytical Plan =SRNL-SCS-2008-00043, Prep=PF, Oxide=Li2O (wt%)

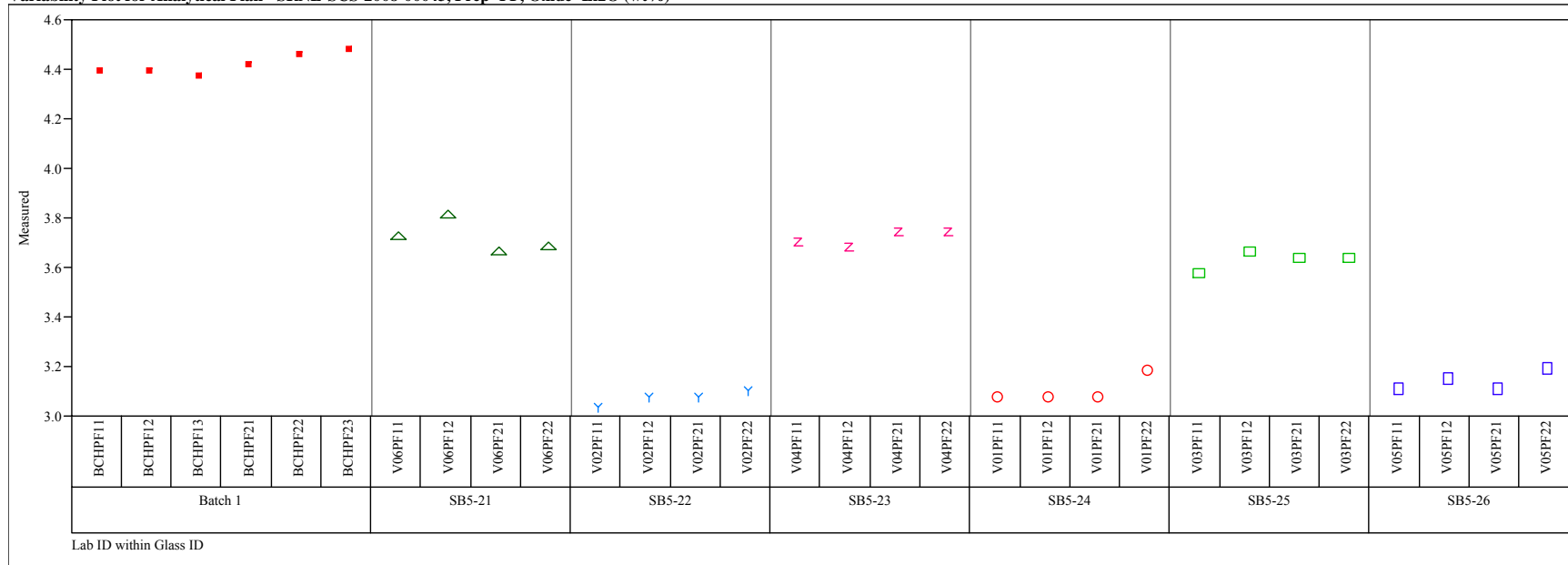
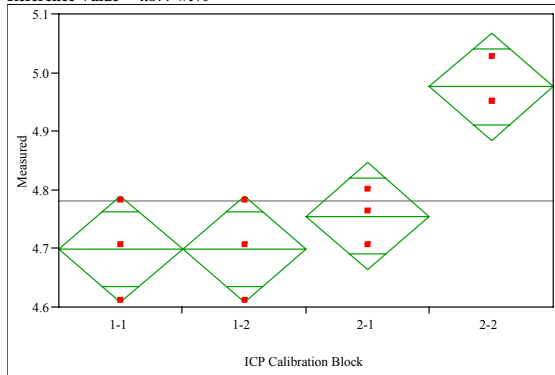


Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo.

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan=SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Al2O3 (wt%)
Reference Value = 4.877 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.807214
Adj Rsquare	0.734919
Root Mean Square Error	0.068345
Mean of Response	4.78201
Observations (or Sum Wgts)	12

Analysis of Variance

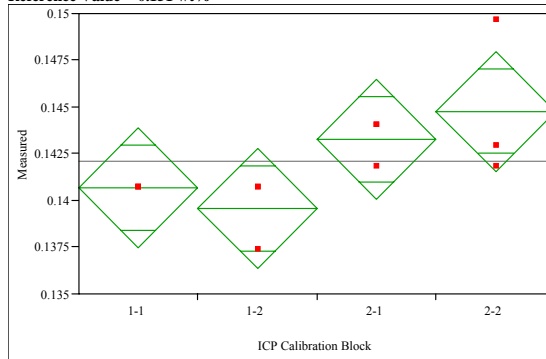
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.15646446	0.052155	11.1656	0.0031
Error	8	0.03736820	0.004671		
C. Total	11	0.19383266			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	4.69856	0.03946	4.6076	4.7895
1-2	3	4.69856	0.03946	4.6076	4.7895
2-1	3	4.75524	0.03946	4.6642	4.8462
2-2	3	4.97568	0.03946	4.8847	5.0667

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan=SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=BaO (wt%)
Reference Value = 0.151 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.522897
Adj Rsquare	0.343983
Root Mean Square Error	0.002412
Mean of Response	0.142075
Observations (or Sum Wgts)	12

Analysis of Variance

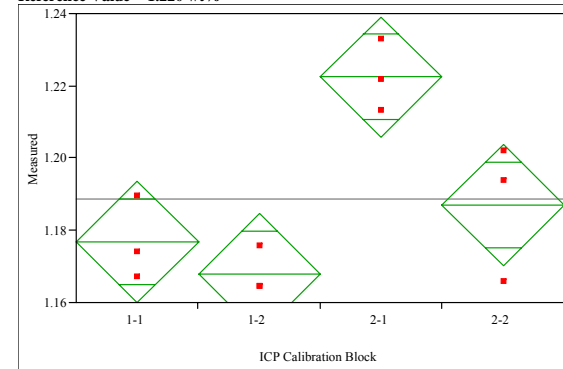
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00005101	0.000017	2.9226	0.1001
Error	8	0.00004654	5.817e-6		
C. Total	11	0.00009754			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.140679	0.00139	0.13747	0.14389
1-2	3	0.139563	0.00139	0.13635	0.14277
2-1	3	0.143284	0.00139	0.14007	0.14650
2-2	3	0.144773	0.00139	0.14156	0.14798

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan=SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=CaO (wt%)
Reference Value = 1.220 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.802984
Adj Rsquare	0.729103
Root Mean Square Error	0.012573
Mean of Response	1.188504
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00515462	0.001718	10.8686	0.0034
Error	8	0.00126471	0.000158		
C. Total	11	0.00641933			

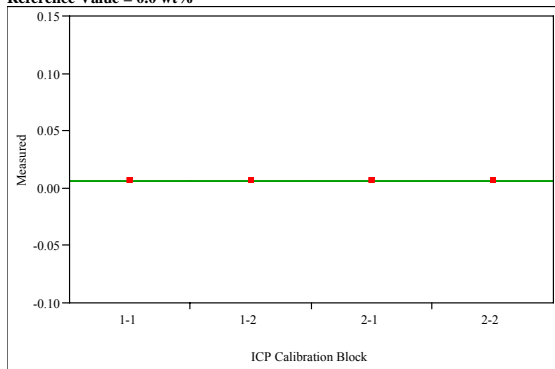
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.17673	0.00726	1.1600	1.1935
1-2	3	1.16787	0.00726	1.1511	1.1846
2-1	3	1.22243	0.00726	1.2057	1.2392
2-2	3	1.18699	0.00726	1.1702	1.2037

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=CdO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare
Adj Rsquare
Root Mean Square Error 0
Mean of Response 0.005712
Observations (or Sum Wgts) 12

Analysis of Variance

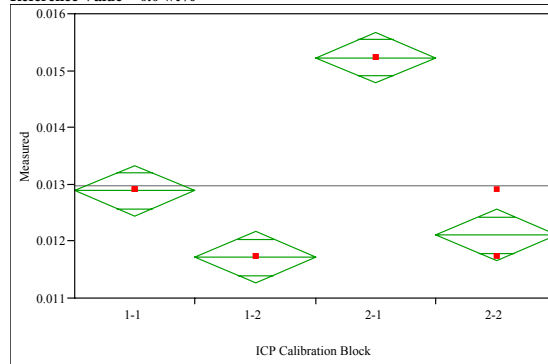
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005712	0	0.00571	0.00571
1-2	3	0.005712	0	0.00571	0.00571
2-1	3	0.005712	0	0.00571	0.00571
2-2	3	0.005712	0	0.00571	0.00571

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Ce2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.960591
Adj Rsquare 0.945813
Root Mean Square Error 0.000338
Mean of Response 0.012982
Observations (or Sum Wgts) 12

Analysis of Variance

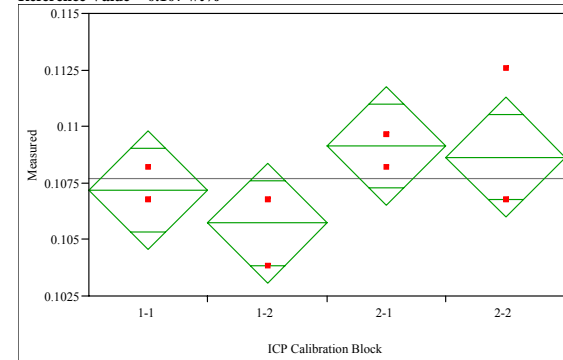
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00002229	7.4314e-6	65.0000	<.0001
Error	8	0.00000091	1.1433e-7		
C. Total	11	0.00002321			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.012884	0.00020	0.01243	0.01333
1-2	3	0.011713	0.00020	0.01126	0.01216
2-1	3	0.015227	0.00020	0.01478	0.01568
2-2	3	0.012103	0.00020	0.01165	0.01255

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Cr2O3 (wt%)
Reference Value = 0.107 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.405405
Adj Rsquare 0.182432
Root Mean Square Error 0.001979
Mean of Response 0.107671
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00002136	7.1209e-6	1.8182	0.2218
Error	8	0.00003133	3.9165e-6		
C. Total	11	0.00005269			

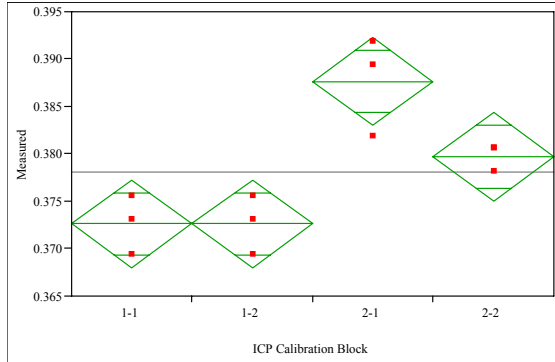
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.107184	0.00114	0.10455	0.10982
1-2	3	0.105722	0.00114	0.10309	0.10836
2-1	3	0.109133	0.00114	0.10650	0.11177
2-2	3	0.108646	0.00114	0.10601	0.11128

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=CuO (wt%)
Reference Value = 0.399 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.824422
Adj Rsquare	0.75858
Root Mean Square Error	0.003504
Mean of Response	0.378148
Observations (or Sum Wgts)	12

Analysis of Variance

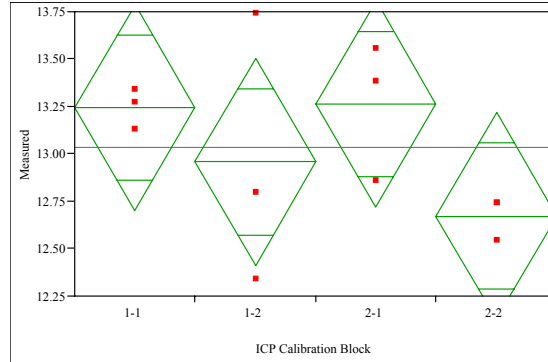
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00046109	0.000154	12.5213	0.0022
Error	8	0.00009820	0.000012		
C. Total	11	0.00055929			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.372619	0.00202	0.36795	0.37728
1-2	3	0.372619	0.00202	0.36795	0.37728
2-1	3	0.387641	0.00202	0.38298	0.39231
2-2	3	0.379713	0.00202	0.37505	0.38438

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Fe2O3 (wt%)
Reference Value = 12.839 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.343407
Adj Rsquare	0.097185
Root Mean Square Error	0.408988
Mean of Response	13.0341
Observations (or Sum Wgts)	12

Analysis of Variance

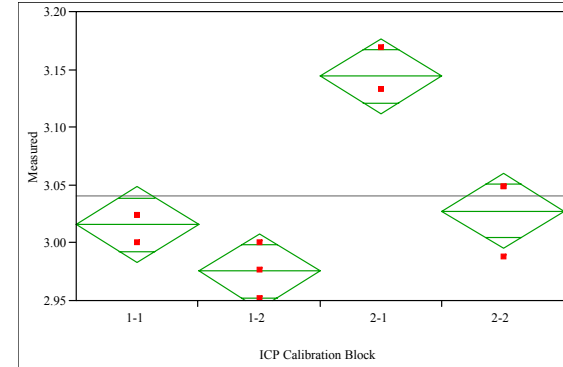
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.6998800	0.233293	1.3947	0.3133
Error	8	1.3381662	0.167271		
C. Total	11	2.0380462			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	13.2438	0.23613	12.699	13.788
1-2	3	12.9578	0.23613	12.413	13.502
2-1	3	13.2629	0.23613	12.718	13.807
2-2	3	12.6719	0.23613	12.127	13.216

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=K2O (wt%)
Reference Value = 3.327 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.907128
Adj Rsquare	0.872301
Root Mean Square Error	0.024589
Mean of Response	3.040611
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.04724413	0.015748	26.0467	0.0002
Error	8	0.00483687	0.000605		
C. Total	11	0.05208100			

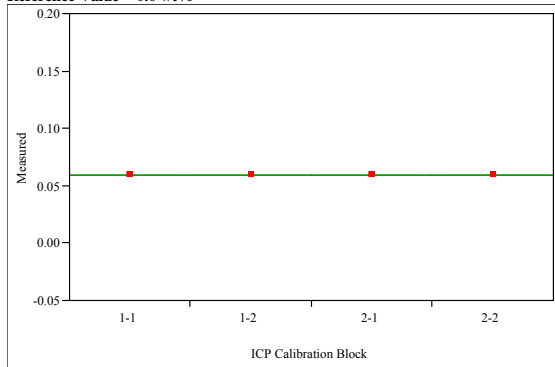
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	3.01552	0.01420	2.9828	3.0483
1-2	3	2.97536	0.01420	2.9426	3.0081
2-1	3	3.14401	0.01420	3.1113	3.1767
2-2	3	3.02756	0.01420	2.9948	3.0603

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=La2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.05864
Observations (or Sum Wgts)	12

Analysis of Variance

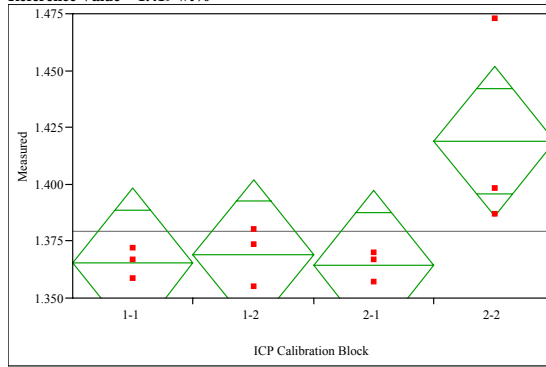
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.058640	0	0.05864	0.05864
1-2	3	0.058640	0	0.05864	0.05864
2-1	3	0.058640	0	0.05864	0.05864
2-2	3	0.058640	0	0.05864	0.05864

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=MgO (wt%)
Reference Value = 1.419 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.562239
Adj Rsquare	0.398078
Root Mean Square Error	0.024741
Mean of Response	1.379429
Observations (or Sum Wgts)	12

Analysis of Variance

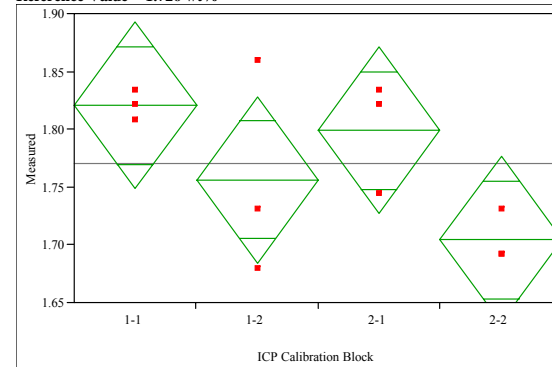
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00628916	0.002096	3.4249	0.0727
Error	8	0.00489676	0.000612		
C. Total	11	0.01118592			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.36533	0.01428	1.3324	1.3983
1-2	3	1.36920	0.01428	1.3363	1.4021
2-1	3	1.36423	0.01428	1.3313	1.3972
2-2	3	1.41895	0.01428	1.3860	1.4519

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=MnO (wt%)
Reference Value = 1.726 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.502798
Adj Rsquare	0.316348
Root Mean Square Error	0.054143
Mean of Response	1.77002
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.02371588	0.007905	2.6967	0.1165
Error	8	0.02345191	0.002931		
C. Total	11	0.04716779			

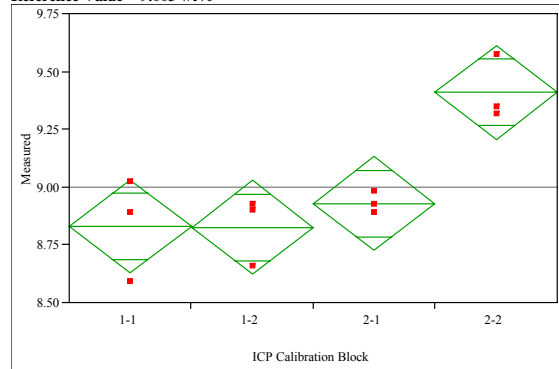
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.82059	0.03126	1.7485	1.8927
1-2	3	1.75603	0.03126	1.6839	1.8281
2-1	3	1.79907	0.03126	1.7270	1.8712
2-2	3	1.70438	0.03126	1.6323	1.7765

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Na2O (wt%)
Reference Value = 9.003 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.789633
Adj Rsquare	0.710745
Root Mean Square Error	0.15231
Mean of Response	8.9979
Observations (or Sum Wgts)	12

Analysis of Variance

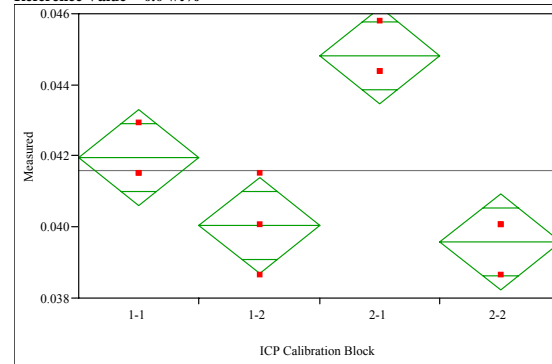
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.69661710	0.232206	10.0096	0.0044
Error	8	0.18558689	0.023198		
C. Total	11	0.88220399			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	8.82940	0.08794	8.6266	9.0322
1-2	3	8.82491	0.08794	8.6221	9.0277
2-1	3	8.92825	0.08794	8.7255	9.1310
2-2	3	9.40904	0.08794	9.2063	9.6118

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Nb2O5 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.861671
Adj Rsquare	0.809798
Root Mean Square Error	0.001012
Mean of Response	0.041604
Observations (or Sum Wgts)	12

Analysis of Variance

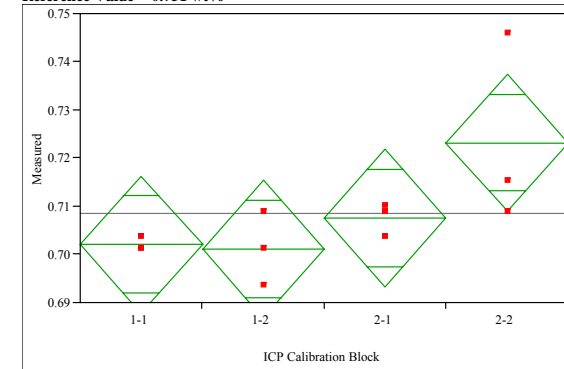
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00005099	0.000017	16.6111	0.0008
Error	8	0.00000819	1.023e-6		
C. Total	11	0.00005917			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.041961	0.00058	0.04061	0.04331
1-2	3	0.040054	0.00058	0.03871	0.04140
2-1	3	0.044822	0.00058	0.04348	0.04617
2-2	3	0.039577	0.00058	0.03823	0.04092

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=NiO (wt%)
Reference Value = 0.751 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.505035
Adj Rsquare	0.319423
Root Mean Square Error	0.010735
Mean of Response	0.708464
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00094065	0.000314	2.7209	0.1146
Error	8	0.00092190	0.000115		
C. Total	11	0.00186255			

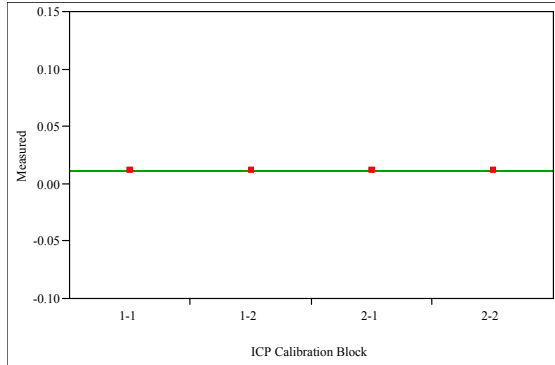
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.701996	0.00620	0.68770	0.71629
1-2	3	0.701148	0.00620	0.68686	0.71544
2-1	3	0.707510	0.00620	0.69322	0.72180
2-2	3	0.723204	0.00620	0.70891	0.73750

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=PbO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0
Adj Rsquare	-0.375
Root Mean Square Error	2.12e-18
Mean of Response	0.010772
Observations (or Sum Wgts)	12

Analysis of Variance

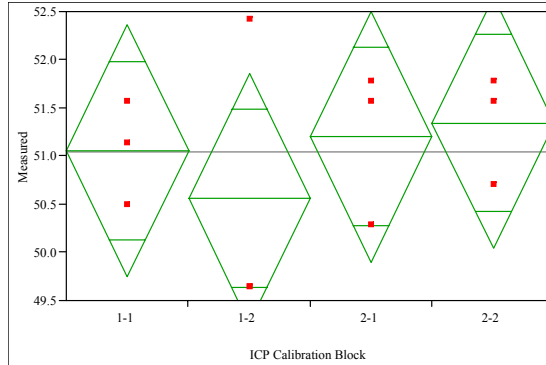
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	0.0000	1.0000
Error	8	3.6111e-35	4.514e-36		
C. Total	11	3.6111e-35			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.010772	1.227e-18	0.01077	0.01077
1-2	3	0.010772	1.227e-18	0.01077	0.01077
2-1	3	0.010772	1.227e-18	0.01077	0.01077
2-2	3	0.010772	1.227e-18	0.01077	0.01077

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=SiO2 (wt%)
Reference Value = 50.22 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.120035
Adj Rsquare	-0.20995
Root Mean Square Error	0.98035
Mean of Response	51.04013
Observations (or Sum Wgts)	12

Analysis of Variance

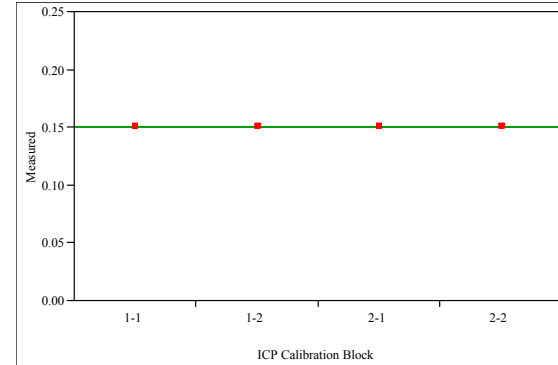
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	1.0488052	0.349602	0.3638	0.7812
Error	8	7.6886955	0.961087		
C. Total	11	8.7375007			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	51.0580	0.56601	49.753	52.363
1-2	3	50.5588	0.56601	49.254	51.864
2-1	3	51.2006	0.56601	49.895	52.506
2-2	3	51.3432	0.56601	50.038	52.648

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=SO4 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0
Adj Rsquare	-0.375
Root Mean Square Error	0
Mean of Response	0.149795
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

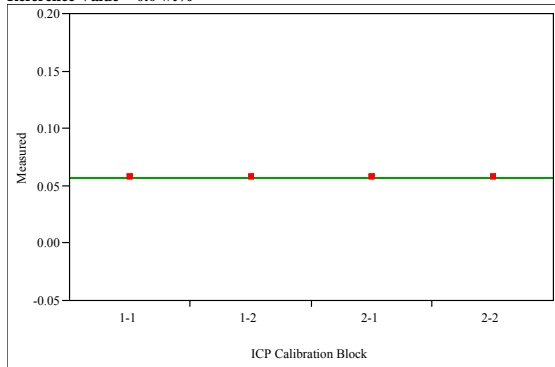
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.149795	0	0.14980	0.14980
1-2	3	0.149795	0	0.14980	0.14980
2-1	3	0.149795	0	0.14980	0.14980
2-2	3	0.149795	0	0.14980	0.14980

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=ThO2 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.056895
Observations (or Sum Wgts) 12

Analysis of Variance

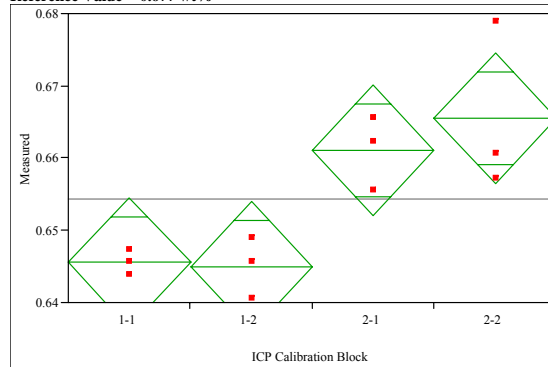
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.056895	0	0.05690	0.05690
1-2	3	0.056895	0	0.05690	0.05690
2-1	3	0.056895	0	0.05690	0.05690
2-2	3	0.056895	0	0.05690	0.05690

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=TiO2 (wt%)
Reference Value = 0.677 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.734278
Adj Rsquare 0.634632
Root Mean Square Error 0.006758
Mean of Response 0.654273
Observations (or Sum Wgts) 12

Analysis of Variance

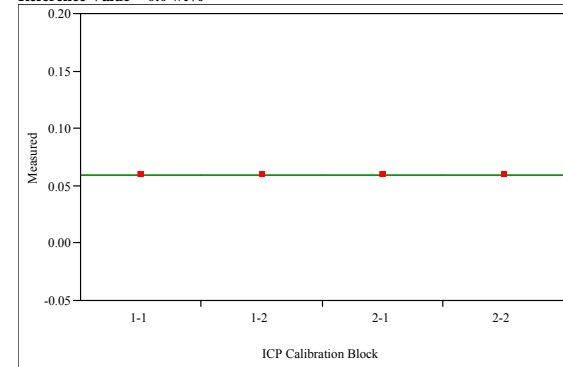
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00100972	0.000337	7.3689	0.0109
Error	8	0.00036540	0.000046		
C. Total	11	0.00137511			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.645516	0.00390	0.63652	0.65451
1-2	3	0.644960	0.00390	0.63596	0.65396
2-1	3	0.661084	0.00390	0.65209	0.67008
2-2	3	0.665532	0.00390	0.65653	0.67453

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=U3O8 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.05896
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

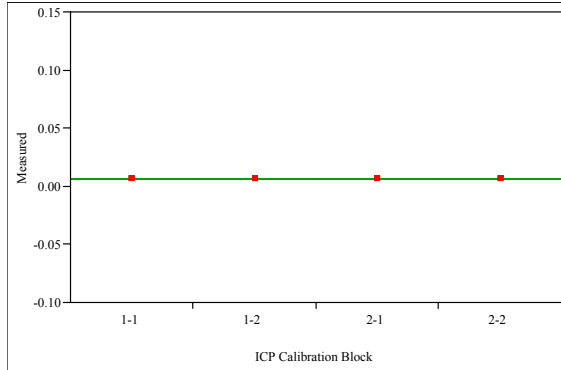
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.058960	0	0.05896	0.05896
1-2	3	0.058960	0	0.05896	0.05896
2-1	3	0.058960	0	0.05896	0.05896
2-2	3	0.058960	0	0.05896	0.05896

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=ZnO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.006224
Observations (or Sum Wgts)	12

Analysis of Variance

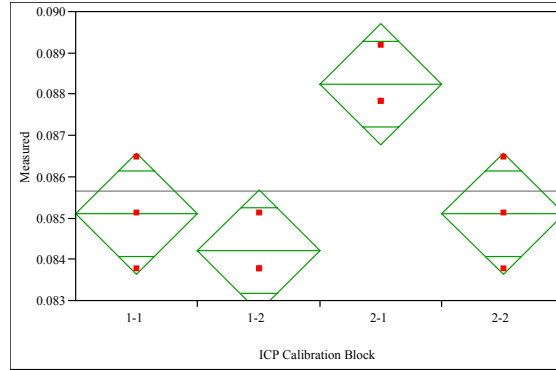
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	.	.
Error	8	0	0	.	.
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006224	0	0.00622	0.00622
1-2	3	0.006224	0	0.00622	0.00622
2-1	3	0.006224	0	0.00622	0.00622
2-2	3	0.006224	0	0.00622	0.00622

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=ZrO2 (wt%)
Reference Value = 0.098 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.74502
Adj Rsquare	0.649402
Root Mean Square Error	0.001103
Mean of Response	0.085663
Observations (or Sum Wgts)	12

Analysis of Variance

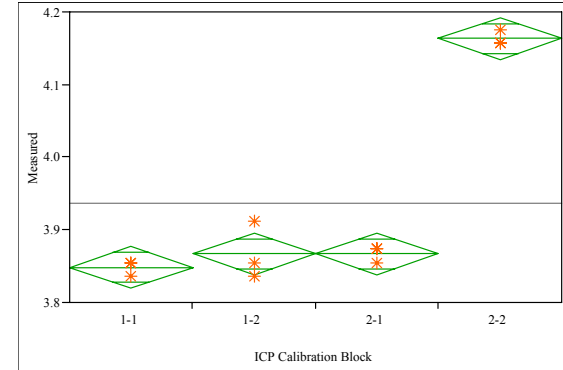
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00002843	9.4781e-6	7.7917	0.0093
Error	8	0.00000973	1.2164e-6		
C. Total	11	0.00003817			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.085100	0.00064	0.08363	0.08657
1-2	3	0.084200	0.00064	0.08273	0.08567
2-1	3	0.088252	0.00064	0.08678	0.08972
2-2	3	0.085100	0.00064	0.08363	0.08657

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Al2O3 (wt%)
Reference Value = 4.1 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.98188
Adj Rsquare	0.975085
Root Mean Square Error	0.021818
Mean of Response	3.936458
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.20635815	0.068786	144.5000	<.0001
Error	8	0.00380822	0.000476		
C. Total	11	0.21016638			

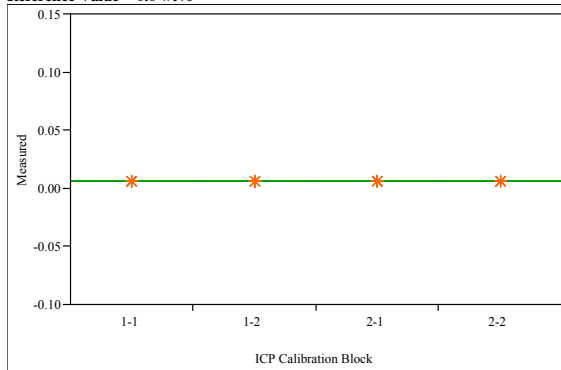
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	3.84828	0.01260	3.8192	3.8773
1-2	3	3.86718	0.01260	3.8381	3.8962
2-1	3	3.86718	0.01260	3.8381	3.8962
2-2	3	4.16320	0.01260	4.1342	4.1922

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=BaO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005583
Observations (or Sum Wgts) 12

Analysis of Variance

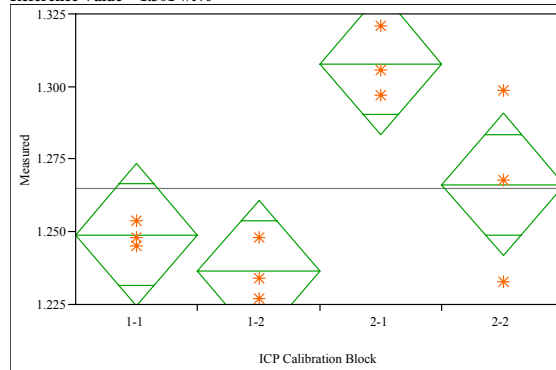
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005583	0	0.00558	0.00558
1-2	3	0.005583	0	0.00558	0.00558
2-1	3	0.005583	0	0.00558	0.00558
2-2	3	0.005583	0	0.00558	0.00558

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=CaO (wt%)
Reference Value = 1.301 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.761986
Adj Rsquare 0.672731
Root Mean Square Error 0.018443
Mean of Response 1.264877
Observations (or Sum Wgts) 12

Analysis of Variance

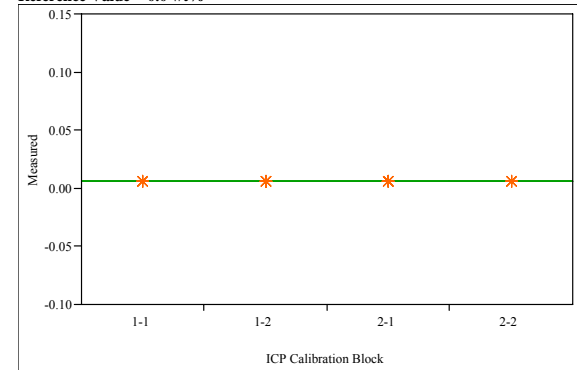
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00871203	0.002904	8.5372	0.0071
Error	8	0.00272129	0.000340		
C. Total	11	0.01143332			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.24902	0.01065	1.2245	1.2736
1-2	3	1.23643	0.01065	1.2119	1.2610
2-1	3	1.30779	0.01065	1.2832	1.3323
2-2	3	1.26628	0.01065	1.2417	1.2908

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=CdO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005712
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

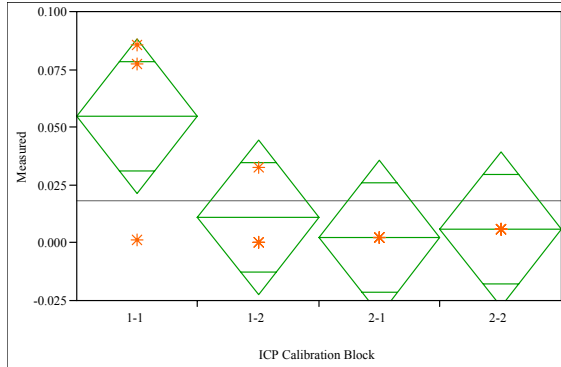
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005712	0	0.00571	0.00571
1-2	3	0.005712	0	0.00571	0.00571
2-1	3	0.005712	0	0.00571	0.00571
2-2	3	0.005712	0	0.00571	0.00571

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Ce2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.515144
Adj Rsquare	0.333322
Root Mean Square Error	0.025106
Mean of Response	0.018448
Observations (or Sum Wgts)	12

Analysis of Variance

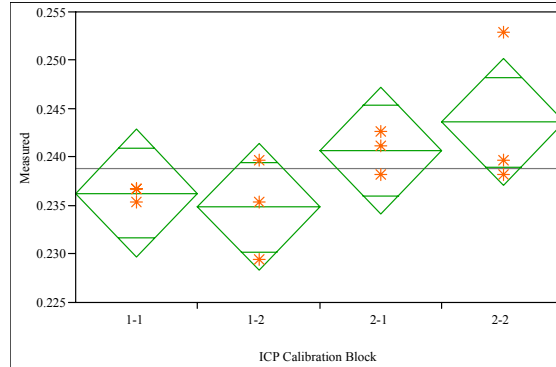
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00535733	0.001786	2.8332	0.1062
Error	8	0.00504235	0.000630		
C. Total	11	0.01039968			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.054661	0.01449	0.0212	0.08809
1-2	3	0.010932	0.01449	-0.0225	0.04436
2-1	3	0.002343	0.01449	-0.0311	0.03577
2-2	3	0.005857	0.01449	-0.0276	0.03928

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Cr2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.42947
Adj Rsquare	0.215522
Root Mean Square Error	0.00492
Mean of Response	0.23885
Observations (or Sum Wgts)	12

Analysis of Variance

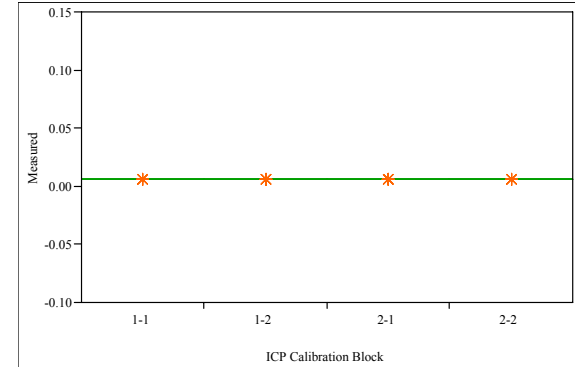
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00014580	0.000049	2.0074	0.1916
Error	8	0.00019369	0.000024		
C. Total	11	0.00033949			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.236292	0.00284	0.22974	0.24284
1-2	3	0.234830	0.00284	0.22828	0.24138
2-1	3	0.240677	0.00284	0.23413	0.24723
2-2	3	0.243600	0.00284	0.23705	0.25015

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=CuO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.006259
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	.	.
Error	8	0	0		
C. Total	11	0			

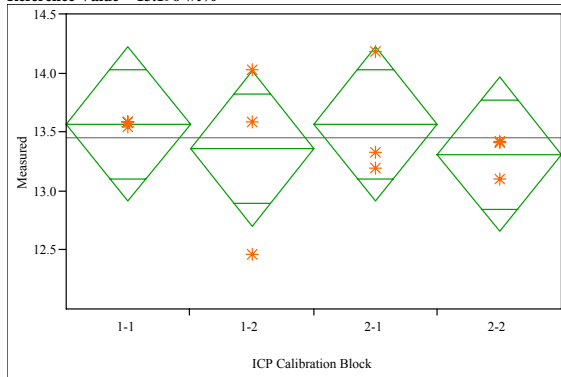
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006259	0	0.00626	0.00626
1-2	3	0.006259	0	0.00626	0.00626
2-1	3	0.006259	0	0.00626	0.00626
2-2	3	0.006259	0	0.00626	0.00626

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Fe2O3 (wt%)
Reference Value = 13.196 wt%



Oneway Anova
Summary of Fit

Rsquare 0.079446
Adj Rsquare -0.26576
Root Mean Square Error 0.491811
Mean of Response 13.45109
Observations (or Sum Wgts) 12

Analysis of Variance

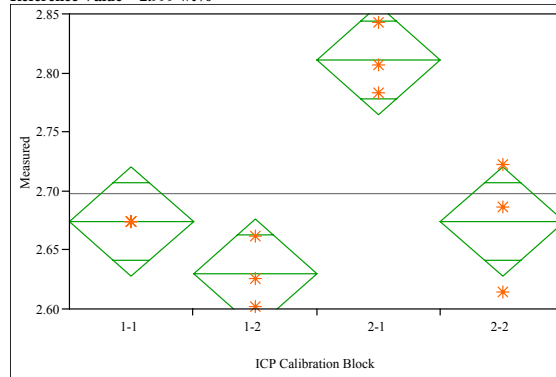
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.1669982	0.055666	0.2301	0.8729
Error	8	1.9350265	0.241878		
C. Total	11	2.1020248			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	13.5679	0.28395	12.913	14.223
1-2	3	13.3582	0.28395	12.703	14.013
2-1	3	13.5679	0.28395	12.913	14.223
2-2	3	13.3105	0.28395	12.656	13.965

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=K2O (wt%)
Reference Value = 2.999 wt%



Oneway Anova
Summary of Fit

Rsquare 0.850009
Adj Rsquare 0.793763
Root Mean Square Error 0.034947
Mean of Response 2.6973
Observations (or Sum Wgts) 12

Analysis of Variance

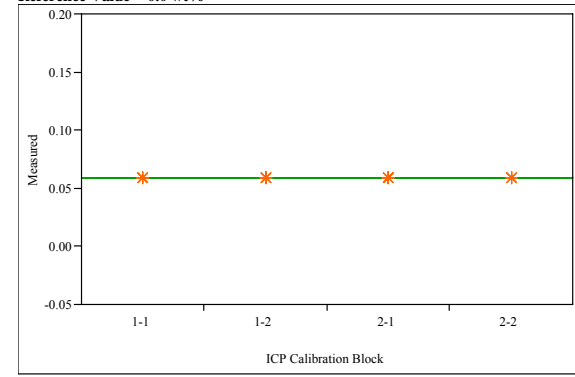
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.05537008	0.018457	15.1122	0.0012
Error	8	0.00977048	0.001221		
C. Total	11	0.06514055			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.67421	0.02018	2.6277	2.7207
1-2	3	2.63004	0.02018	2.5835	2.6766
2-1	3	2.81073	0.02018	2.7642	2.8573
2-2	3	2.67421	0.02018	2.6277	2.7207

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=La2O3 (wt%)
Reference Value = 0.0 wt%



Oneway Anova
Summary of Fit

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.05864
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

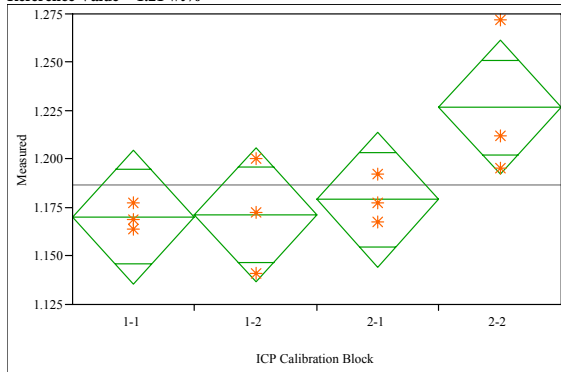
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.058640	0	0.05864	0.05864
1-2	3	0.058640	0	0.05864	0.05864
2-1	3	0.058640	0	0.05864	0.05864
2-2	3	0.058640	0	0.05864	0.05864

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=MgO (wt%)
Reference Value = 1.21 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.544978
Adj Rsquare	0.374344
Root Mean Square Error	0.025996
Mean of Response	1.18679
Observations (or Sum Wgts)	12

Analysis of Variance

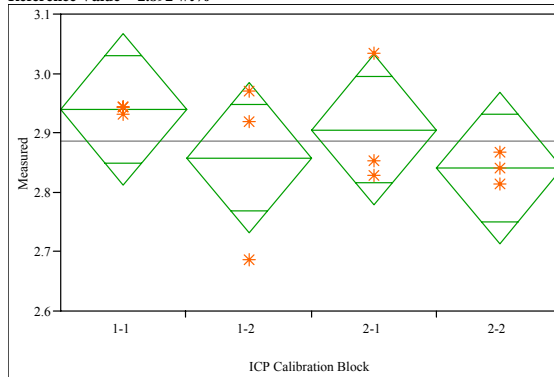
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00647524	0.002158	3.1939	0.0840
Error	8	0.00540642	0.000676		
C. Total	11	0.01188166			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.17021	0.01501	1.1356	1.2048
1-2	3	1.17131	0.01501	1.1367	1.2059
2-1	3	1.17905	0.01501	1.1444	1.2137
2-2	3	1.22659	0.01501	1.1920	1.2612

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=MnO (wt%)
Reference Value = 2.892 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.201223
Adj Rsquare	-0.09832
Root Mean Square Error	0.095249
Mean of Response	2.885832
Observations (or Sum Wgts)	12

Analysis of Variance

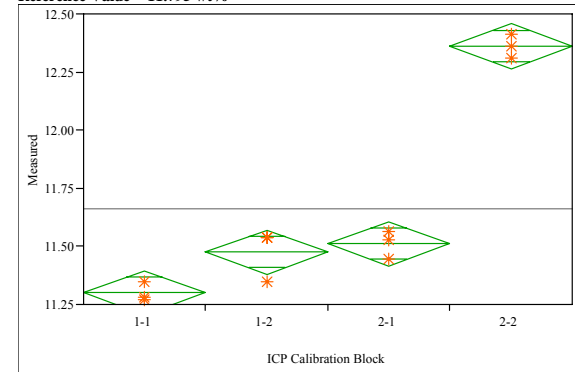
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.01828360	0.006095	0.6718	0.5930
Error	8	0.07257866	0.009072		
C. Total	11	0.09086226			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.93963	0.05499	2.8128	3.0664
1-2	3	2.85786	0.05499	2.7310	2.9847
2-1	3	2.90520	0.05499	2.7784	3.0320
2-2	3	2.84064	0.05499	2.7138	2.9675

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Na2O (wt%)
Reference Value = 11.795 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.980223
Adj Rsquare	0.972807
Root Mean Square Error	0.071541
Mean of Response	11.66245
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	2.0294023	0.676467	132.1696	<.0001
Error	8	0.0409454	0.005118		
C. Total	11	2.0703477			

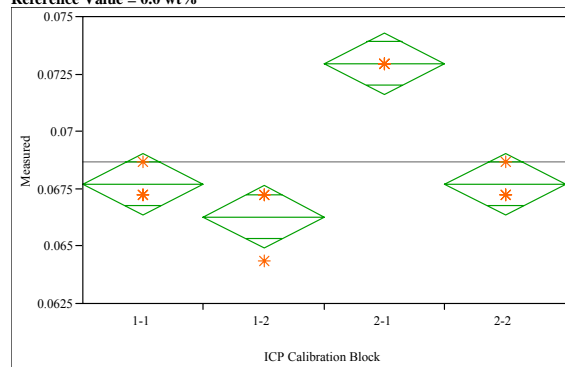
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	11.3007	0.04130	11.205	11.396
1-2	3	11.4760	0.04130	11.381	11.571
2-1	3	11.5119	0.04130	11.417	11.607
2-2	3	12.3612	0.04130	12.266	12.456

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Nb2O5 (wt%)
Reference Value = 0.0 wt%



Oneway Anova Summary of Fit

Rsquare	0.904762
Adj Rsquare	0.869048
Root Mean Square Error	0.001012
Mean of Response	0.068664
Observations (or Sum Wgts)	12

Analysis of Variance

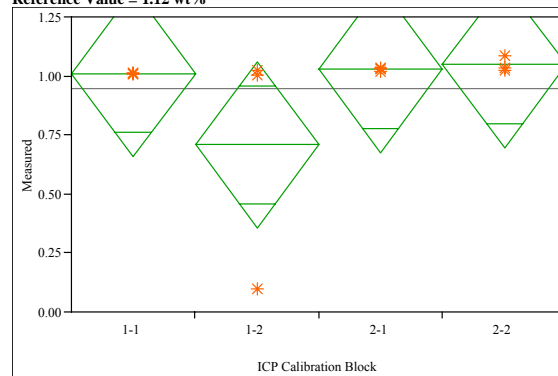
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00007776	0.000026	25.3333	0.0002
Error	8	0.00000819	1.023e-6		
C. Total	11	0.00008595			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.067710	0.00058	0.06636	0.06906
1-2	3	0.066280	0.00058	0.06493	0.06763
2-1	3	0.072956	0.00058	0.07161	0.07430
2-2	3	0.067710	0.00058	0.06636	0.06906

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=NiO (wt%)
Reference Value = 1.12 wt%



Oneway Anova Summary of Fit

Rsquare	0.29165
Adj Rsquare	0.026019
Root Mean Square Error	0.264663
Mean of Response	0.948331
Observations (or Sum Wgts)	12

Analysis of Variance

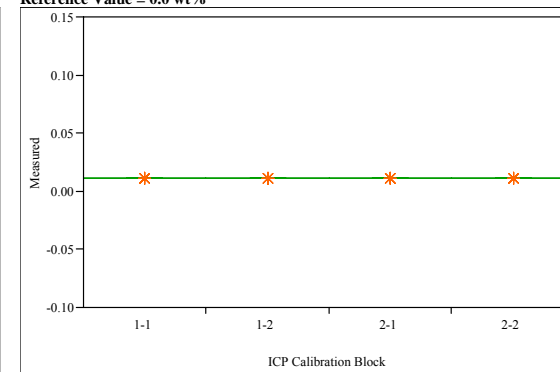
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.23072283	0.076908	1.0980	0.4045
Error	8	0.56037169	0.070046		
C. Total	11	0.79109452			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.01037	0.15280	0.65800	1.3627
1-2	3	0.70921	0.15280	0.35684	1.0616
2-1	3	1.02691	0.15280	0.67454	1.3793
2-2	3	1.04684	0.15280	0.69448	1.3992

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=PbO (wt%)
Reference Value = 0.0 wt%



Oneway Anova Summary of Fit

Rsquare	0
Adj Rsquare	-0.375
Root Mean Square Error	2.12e-18
Mean of Response	0.010772
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	0.0000	1.0000
Error	8	3.6111e-35	4.514e-36		
C. Total	11	3.6111e-35			

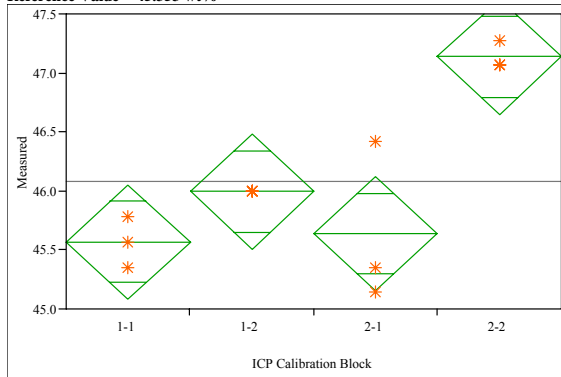
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.010772	1.227e-18	0.01077	0.01077
1-2	3	0.010772	1.227e-18	0.01077	0.01077
2-1	3	0.010772	1.227e-18	0.01077	0.01077
2-2	3	0.010772	1.227e-18	0.01077	0.01077

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=SiO2 (wt%)
Reference Value = 45.353 wt%



Oneway Anova
Summary of Fit

Rsquare 0.816152
Adj Rsquare 0.747209
Root Mean Square Error 0.365355
Mean of Response 46.08409
Observations (or Sum Wgts) 12

Analysis of Variance

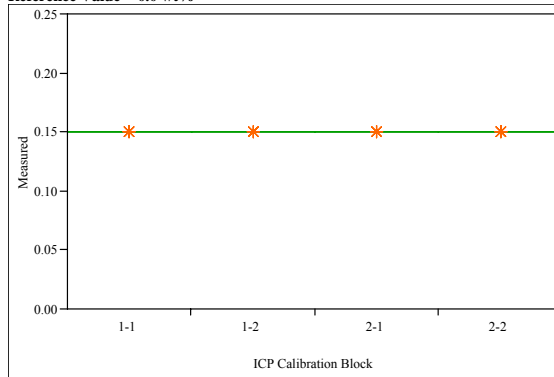
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	4.7405995	1.58020	11.8381	0.0026
Error	8	1.0678744	0.13348		
C. Total	11	5.8084739			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	45.5671	0.21094	45.081	46.054
1-2	3	45.9950	0.21094	45.509	46.481
2-1	3	45.6384	0.21094	45.152	46.125
2-2	3	47.1359	0.21094	46.649	47.622

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=SO4 (wt%)
Reference Value = 0.0 wt%



Oneway Anova
Summary of Fit

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.149795
Observations (or Sum Wgts) 12

Analysis of Variance

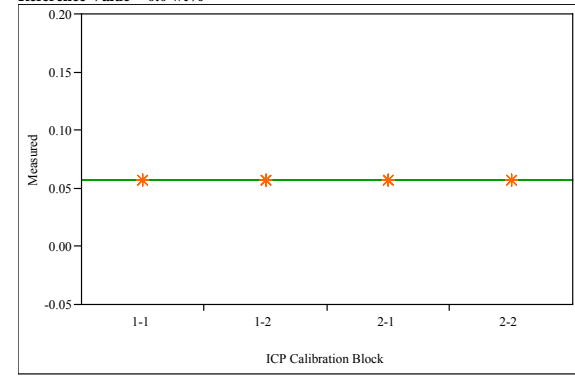
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.149795	0	0.14980	0.14980
1-2	3	0.149795	0	0.14980	0.14980
2-1	3	0.149795	0	0.14980	0.14980
2-2	3	0.149795	0	0.14980	0.14980

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=ThO2 (wt%)
Reference Value = 0.0 wt%



Oneway Anova
Summary of Fit

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.056895
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

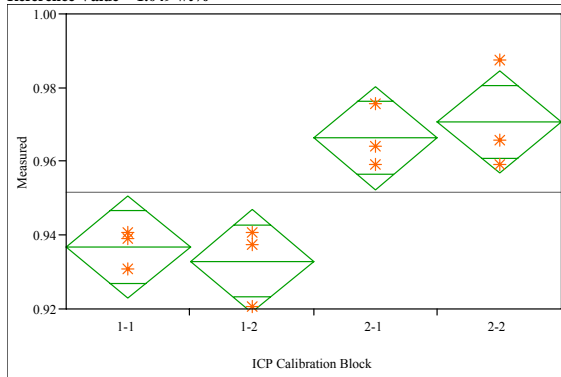
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.056895	0	0.05690	0.05690
1-2	3	0.056895	0	0.05690	0.05690
2-1	3	0.056895	0	0.05690	0.05690
2-2	3	0.056895	0	0.05690	0.05690

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=TiO2 (wt%)
Reference Value = 1.049 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.7978
Adj Rsquare	0.721975
Root Mean Square Error	0.01045
Mean of Response	0.951733
Observations (or Sum Wgts)	12

Analysis of Variance

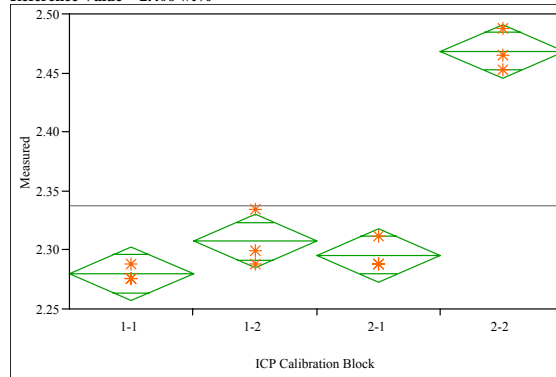
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00344694	0.001149	10.5216	0.0038
Error	8	0.00087362	0.000109		
C. Total	11	0.00432056			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.936860	0.00603	0.92295	0.95077
1-2	3	0.932968	0.00603	0.91906	0.94688
2-1	3	0.966328	0.00603	0.95242	0.98024
2-2	3	0.970776	0.00603	0.95686	0.98469

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=U3O8 (wt%)
Reference Value = 2.406 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.967716
Adj Rsquare	0.955609
Root Mean Square Error	0.01702
Mean of Response	2.337764
Observations (or Sum Wgts)	12

Analysis of Variance

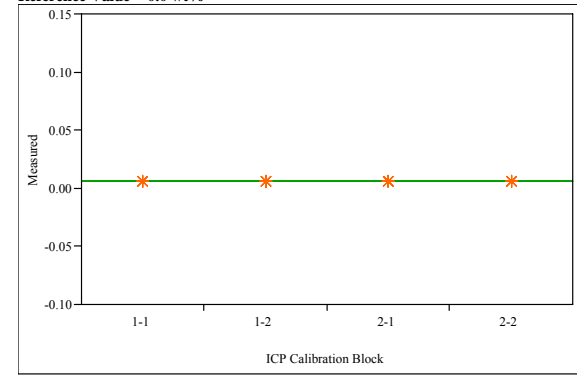
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.06946769	0.023156	79.9333	<.0001
Error	8	0.00231752	0.000290		
C. Total	11	0.07178522			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.27979	0.00983	2.2571	2.3024
1-2	3	2.30730	0.00983	2.2846	2.3300
2-1	3	2.29551	0.00983	2.2728	2.3182
2-2	3	2.46846	0.00983	2.4458	2.4911

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=ZnO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.006224
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	.	.
Error	8	0	0		
C. Total	11	0			

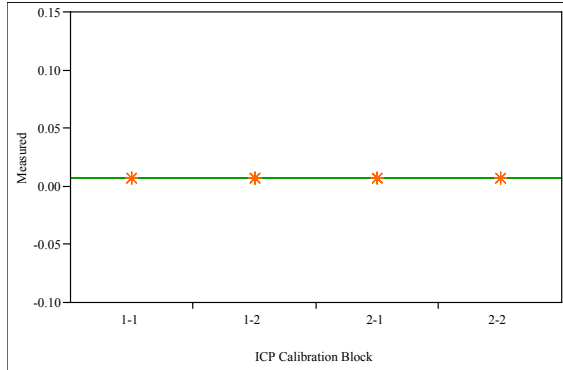
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006224	0	0.00622	0.00622
1-2	3	0.006224	0	0.00622	0.00622
2-1	3	0.006224	0	0.00622	0.00622
2-2	3	0.006224	0	0.00622	0.00622

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=ZrO2 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.006754
Observations (or Sum Wgts) 12

Analysis of Variance

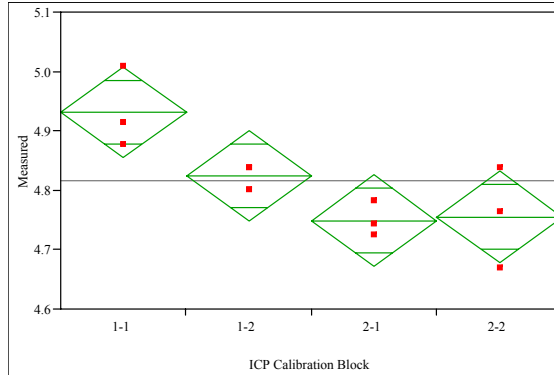
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006754	0	0.00675	0.00675
1-2	3	0.006754	0	0.00675	0.00675
2-1	3	0.006754	0	0.00675	0.00675
2-2	3	0.006754	0	0.00675	0.00675

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Al2O3 (wt%)
Reference Value = 4.877 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.710561
Adj Rsquare 0.602021
Root Mean Square Error 0.057467
Mean of Response 4.815076
Observations (or Sum Wgts) 12

Analysis of Variance

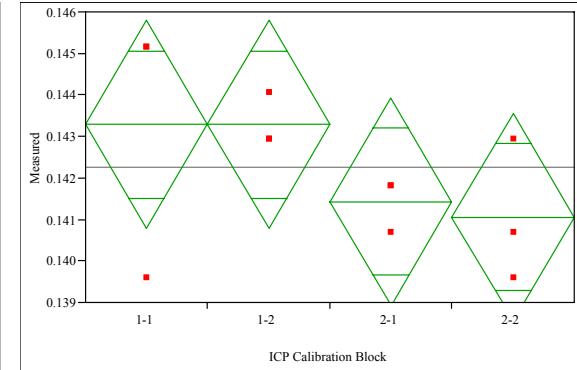
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.06485882	0.021620	6.5465	0.0151
Error	8	0.02641956	0.003302		
C. Total	11	0.09127838			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	4.93160	0.03318	4.8551	5.0081
1-2	3	4.82452	0.03318	4.7480	4.9010
2-1	3	4.74894	0.03318	4.6724	4.8255
2-2	3	4.75524	0.03318	4.6787	4.8318

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=BaO (wt%)
Reference Value = 0.151 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.311392
Adj Rsquare 0.053165
Root Mean Square Error 0.001879
Mean of Response 0.142261
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00001278	4.2591e-6	1.2059	0.3681
Error	8	0.00002826	3.532e-6		
C. Total	11	0.00004103			

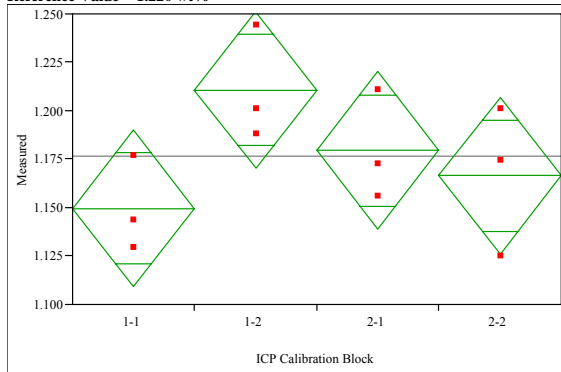
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.143284	0.00109	0.14078	0.14579
1-2	3	0.143284	0.00109	0.14078	0.14579
2-1	3	0.141423	0.00109	0.13892	0.14393
2-2	3	0.141051	0.00109	0.13855	0.14355

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=CaO (wt%)
Reference Value = 1.220 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.447596
Adj Rsquare	0.240444
Root Mean Square Error	0.030455
Mean of Response	1.176611
Observations (or Sum Wgts)	12

Analysis of Variance

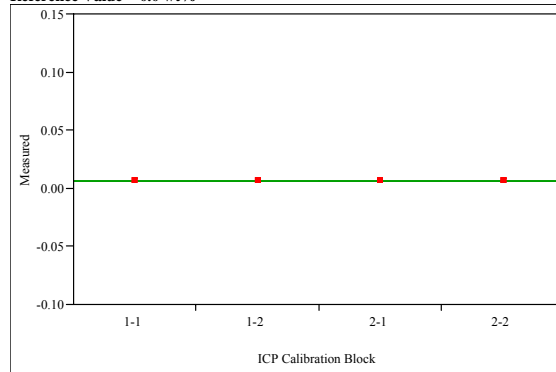
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00601212	0.002004	2.1607	0.1707
Error	8	0.00741991	0.000927		
C. Total	11	0.01343203			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.14968	0.01758	1.1091	1.1902
1-2	3	1.21077	0.01758	1.1702	1.2513
2-1	3	1.17953	0.01758	1.1390	1.2201
2-2	3	1.16647	0.01758	1.1259	1.2070

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=CdO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.005712
Observations (or Sum Wgts)	12

Analysis of Variance

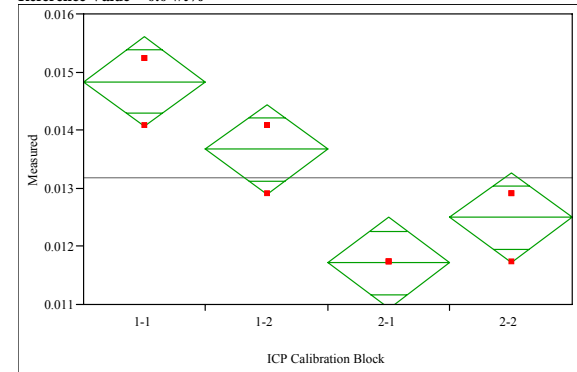
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005712	0	0.00571	0.00571
1-2	3	0.005712	0	0.00571	0.00571
2-1	3	0.005712	0	0.00571	0.00571
2-2	3	0.005712	0	0.00571	0.00571

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Ce2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.859649
Adj Rsquare	0.807018
Root Mean Square Error	0.000586
Mean of Response	0.013177
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00001681	5.6021e-6	16.3333	0.0009
Error	8	0.00000274	3.4299e-7		
C. Total	11	0.00001955			

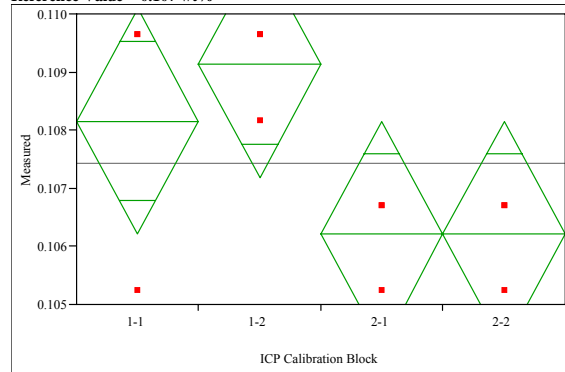
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.014836	0.00034	0.01406	0.01562
1-2	3	0.013665	0.00034	0.01289	0.01444
2-1	3	0.011713	0.00034	0.01093	0.01249
2-2	3	0.012494	0.00034	0.01171	0.01327

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Cr2O3 (wt%)
Reference Value = 0.107 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.529412
Adj Rsquare	0.352941
Root Mean Square Error	0.001462
Mean of Response	0.107428
Observations (or Sum Wgts)	12

Analysis of Variance

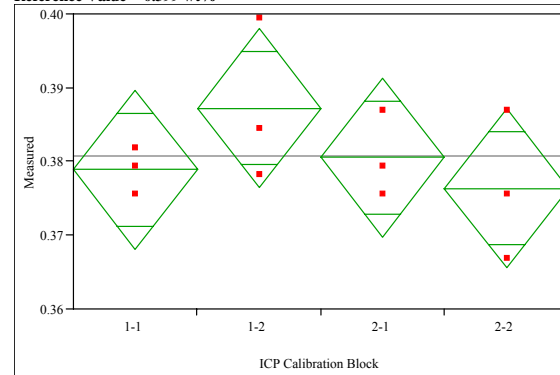
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00001923	6.4088e-6	3.0000	0.0951
Error	8	0.00001709	2.1363e-6		
C. Total	11	0.00003632			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.108158	0.00084	0.10621	0.11010
1-2	3	0.109133	0.00084	0.10719	0.11108
2-1	3	0.106210	0.00084	0.10426	0.10816
2-2	3	0.106210	0.00084	0.10426	0.10816

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=CuO (wt%)
Reference Value = 0.399 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.269036
Adj Rsquare	-0.00508
Root Mean Square Error	0.008113
Mean of Response	0.380756
Observations (or Sum Wgts)	12

Analysis of Variance

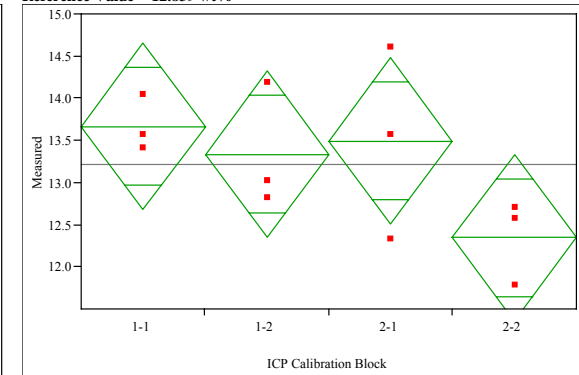
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00019379	0.000065	0.9815	0.4484
Error	8	0.00052651	0.000066		
C. Total	11	0.00072030			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.378878	0.00468	0.36808	0.38968
1-2	3	0.387223	0.00468	0.37642	0.39802
2-1	3	0.380547	0.00468	0.36975	0.39135
2-2	3	0.376375	0.00468	0.36557	0.38718

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Fe2O3 (wt%)
Reference Value = 12.839 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.415438
Adj Rsquare	0.196227
Root Mean Square Error	0.742011
Mean of Response	13.20924
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	3.1302972	1.04343	1.8952	0.2089
Error	8	4.4046382	0.55058		
C. Total	11	7.5349353			

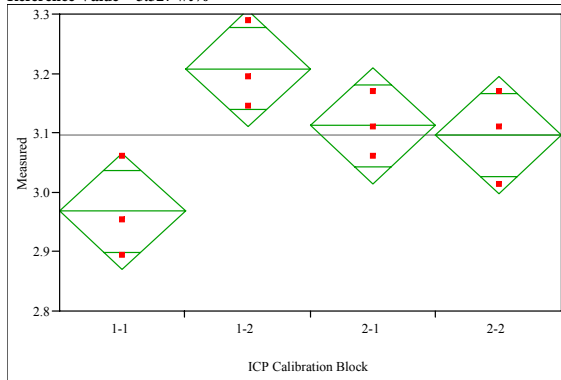
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	13.6632	0.42840	12.675	14.651
1-2	3	13.3343	0.42840	12.346	14.322
2-1	3	13.4916	0.42840	12.504	14.479
2-2	3	12.3478	0.42840	11.360	13.336

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=K2O (wt%)
Reference Value = 3.327 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.66828
Adj Rsquare	0.543886
Root Mean Square Error	0.073857
Mean of Response	3.095922
Observations (or Sum Wgts)	12

Analysis of Variance

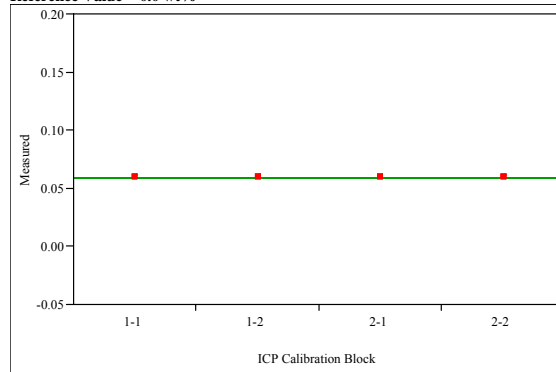
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.08791532	0.029305	5.3723	0.0255
Error	8	0.04363921	0.005455		
C. Total	11	0.13155453			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.96773	0.04264	2.8694	3.0661
1-2	3	3.20825	0.04264	3.1099	3.3066
2-1	3	3.11188	0.04264	3.0136	3.2102
2-2	3	3.09582	0.04264	2.9975	3.1942

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=La2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.05864
Observations (or Sum Wgts)	12

Analysis of Variance

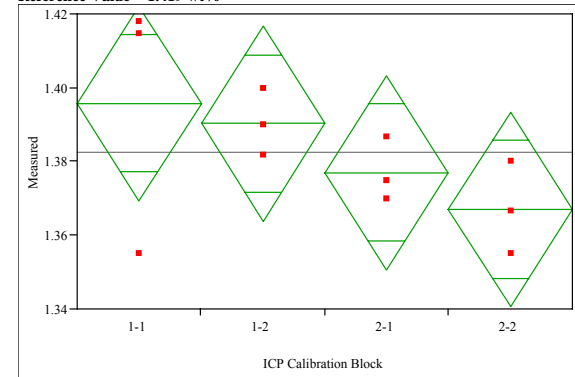
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	.	.
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.058640	0	0.05864	0.05864
1-2	3	0.058640	0	0.05864	0.05864
2-1	3	0.058640	0	0.05864	0.05864
2-2	3	0.058640	0	0.05864	0.05864

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=MgO (wt%)
Reference Value = 1.419 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.326113
Adj Rsquare	0.073405
Root Mean Square Error	0.019801
Mean of Response	1.382469
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00151798	0.000506	1.2905	0.3423
Error	8	0.00313679	0.000392		
C. Total	11	0.00465476			

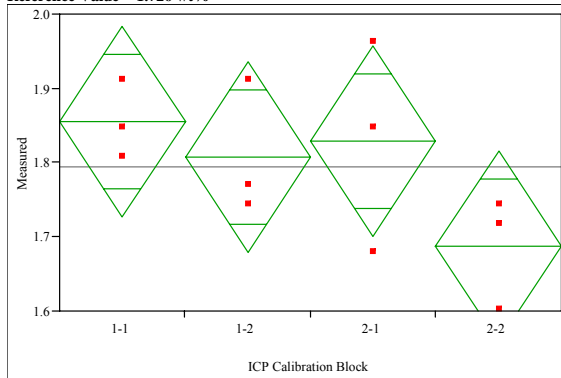
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.39574	0.01143	1.3694	1.4221
1-2	3	1.39021	0.01143	1.3638	1.4166
2-1	3	1.37694	0.01143	1.3506	1.4033
2-2	3	1.36699	0.01143	1.3406	1.3934

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=MnO (wt%)
Reference Value = 1.726 wt%



Oneway Anova
Summary of Fit

Rsquare	0.401617
Adj Rsquare	0.177224
Root Mean Square Error	0.096192
Mean of Response	1.794768
Observations (or Sum Wgts)	12

Analysis of Variance

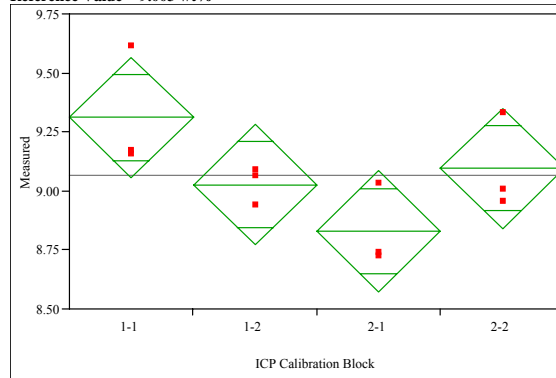
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.04968248	0.016561	1.7898	0.2269
Error	8	0.07402357	0.009253		
C. Total	11	0.12370605			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.85502	0.05554	1.7270	1.9831
1-2	3	1.80768	0.05554	1.6796	1.9357
2-1	3	1.82920	0.05554	1.7011	1.9573
2-2	3	1.68717	0.05554	1.5591	1.8152

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Na2O (wt%)
Reference Value = 9.003 wt%



Oneway Anova
Summary of Fit

Rsquare	0.546757
Adj Rsquare	0.37679
Root Mean Square Error	0.191468
Mean of Response	9.0653
Observations (or Sum Wgts)	12

Analysis of Variance

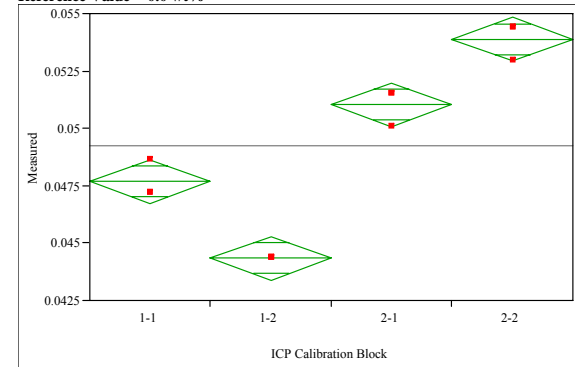
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.35379015	0.117930	3.2169	0.0828
Error	8	0.29328059	0.036660		
C. Total	11	0.64707073			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	9.31019	0.11054	9.0553	9.5651
1-2	3	9.02711	0.11054	8.7722	9.2820
2-1	3	8.82940	0.11054	8.5745	9.0843
2-2	3	9.09451	0.11054	8.8396	9.3494

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Nb2O5 (wt%)
Reference Value = 0.0 wt%



Oneway Anova
Summary of Fit

Rsquare	0.973998
Adj Rsquare	0.964247
Root Mean Square Error	0.000715
Mean of Response	0.049233
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00015330	0.000051	99.8889	<.0001
Error	8	0.00000409	5.116e-7		
C. Total	11	0.00015740			

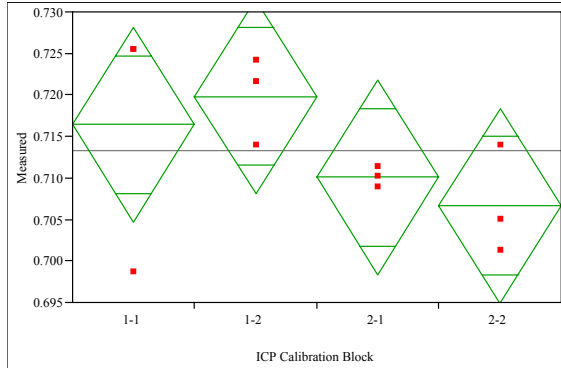
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.047683	0.00041	0.04673	0.04864
1-2	3	0.044346	0.00041	0.04339	0.04530
2-1	3	0.051021	0.00041	0.05007	0.05197
2-2	3	0.053882	0.00041	0.05293	0.05483

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=NiO (wt%)
Reference Value = 0.751 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.340218
Adj Rsquare	0.0928
Root Mean Square Error	0.008808
Mean of Response	0.713236
Observations (or Sum Wgts)	12

Analysis of Variance

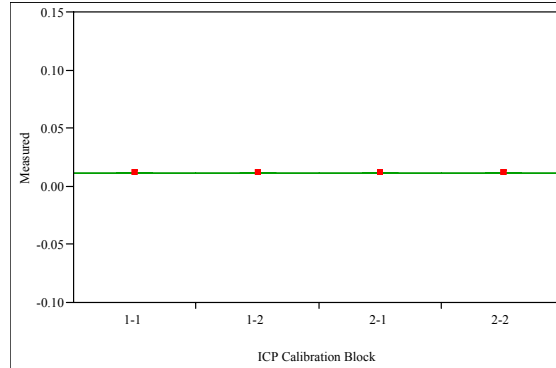
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00032007	0.000107	1.3751	0.3185
Error	8	0.00062071	0.000078		
C. Total	11	0.00094079			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.716418	0.00509	0.70469	0.72814
1-2	3	0.719811	0.00509	0.70808	0.73154
2-1	3	0.710055	0.00509	0.69833	0.72178
2-2	3	0.706662	0.00509	0.69493	0.71839

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=PbO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0
Adj Rsquare	-0.375
Root Mean Square Error	2.12e-18
Mean of Response	0.010772
Observations (or Sum Wgts)	12

Analysis of Variance

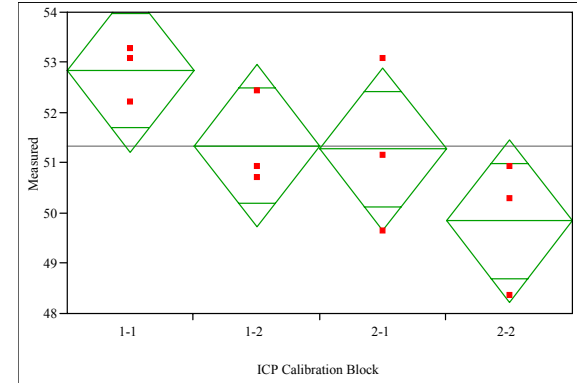
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	0.0000	1.0000
Error	8	3.6111e-35	4.514e-36		
C. Total	11	3.6111e-35			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.010772	1.227e-18	0.01077	0.01077
1-2	3	0.010772	1.227e-18	0.01077	0.01077
2-1	3	0.010772	1.227e-18	0.01077	0.01077
2-2	3	0.010772	1.227e-18	0.01077	0.01077

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=SiO2 (wt%)
Reference Value = 50.22 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.532178
Adj Rsquare	0.356745
Root Mean Square Error	1.216457
Mean of Response	51.32537
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	13.466659	4.48889	3.0335	0.0931
Error	8	11.838150	1.47977		
C. Total	11	25.304809			

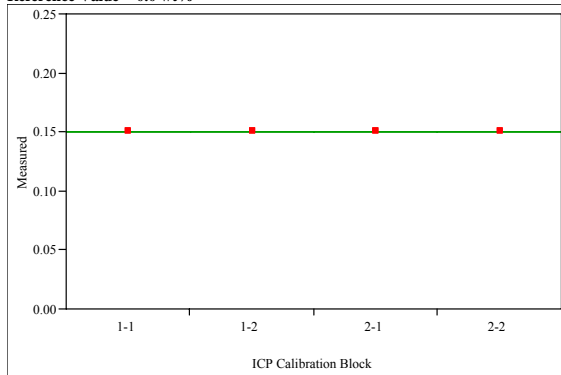
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	52.8407	0.70232	51.221	54.460
1-2	3	51.3432	0.70232	49.724	52.963
2-1	3	51.2719	0.70232	49.652	52.891
2-2	3	49.8457	0.70232	48.226	51.465

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=SO4 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.149795
Observations (or Sum Wgts) 12

Analysis of Variance

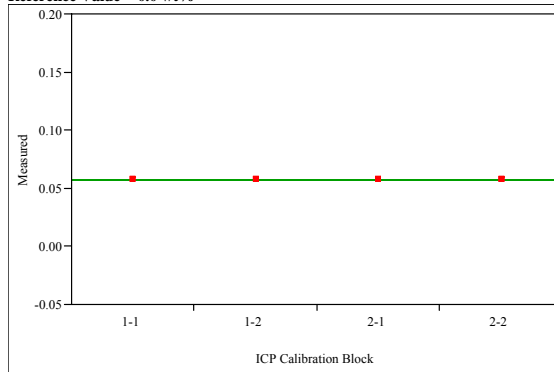
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.149795	0	0.14980	0.14980
1-2	3	0.149795	0	0.14980	0.14980
2-1	3	0.149795	0	0.14980	0.14980
2-2	3	0.149795	0	0.14980	0.14980

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=ThO2 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.056895
Observations (or Sum Wgts) 12

Analysis of Variance

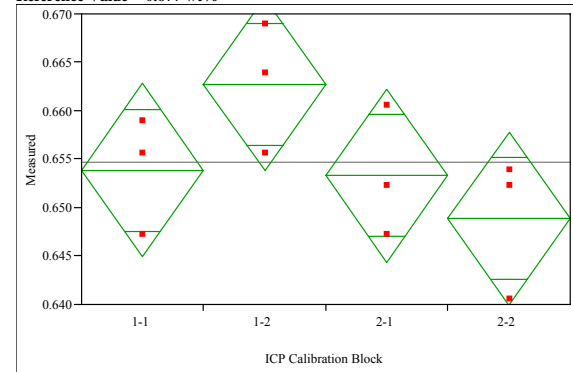
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.056895	0	0.05690	0.05690
1-2	3	0.056895	0	0.05690	0.05690
2-1	3	0.056895	0	0.05690	0.05690
2-2	3	0.056895	0	0.05690	0.05690

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=TiO2 (wt%)
Reference Value = 0.677 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.458856
Adj Rsquare 0.255927
Root Mean Square Error 0.006707
Mean of Response 0.65469
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00030512	0.000102	2.2612	0.1585
Error	8	0.00035983	0.000045		
C. Total	11	0.00066495			

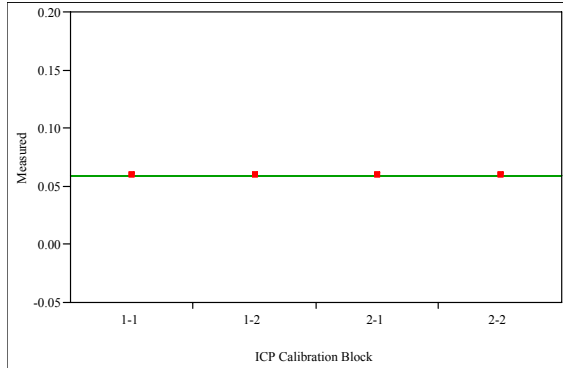
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.653856	0.00387	0.64493	0.66279
1-2	3	0.662752	0.00387	0.65382	0.67168
2-1	3	0.653300	0.00387	0.64437	0.66223
2-2	3	0.648852	0.00387	0.63992	0.65778

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=U3O8 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.05896
Observations (or Sum Wgts) 12

Analysis of Variance

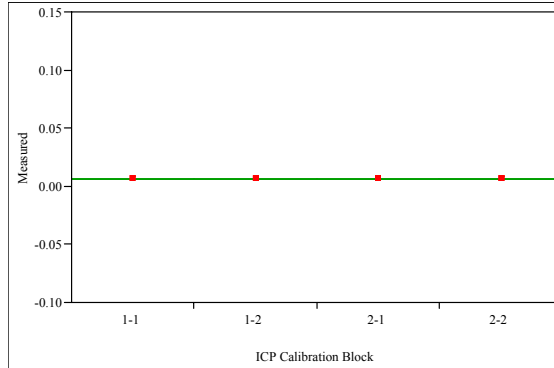
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.058960	0	0.05896	0.05896
1-2	3	0.058960	0	0.05896	0.05896
2-1	3	0.058960	0	0.05896	0.05896
2-2	3	0.058960	0	0.05896	0.05896

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=ZnO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.006224
Observations (or Sum Wgts) 12

Analysis of Variance

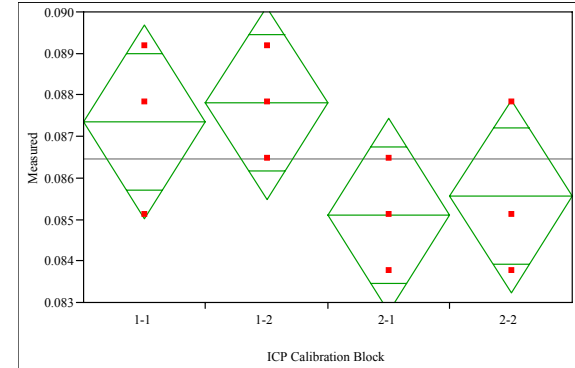
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006224	0	0.00622	0.00622
1-2	3	0.006224	0	0.00622	0.00622
2-1	3	0.006224	0	0.00622	0.00622
2-2	3	0.006224	0	0.00622	0.00622

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=ZrO2 (wt%)
Reference Value = 0.098 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.393939
Adj Rsquare 0.166667
Root Mean Square Error 0.001744
Mean of Response 0.086451
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00001581	5.2712e-6	1.7333	0.2373
Error	8	0.00002433	3.0411e-6		
C. Total	11	0.00004014			

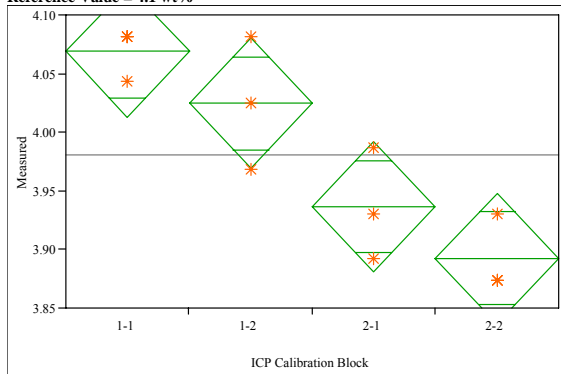
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.087352	0.00101	0.08503	0.08967
1-2	3	0.087802	0.00101	0.08548	0.09012
2-1	3	0.085100	0.00101	0.08278	0.08742
2-2	3	0.085551	0.00101	0.08323	0.08787

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Al2O3 (wt%)
Reference Value = 4.1 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.805921
Adj Rsquare	0.733141
Root Mean Square Error	0.041897
Mean of Response	3.980547
Observations (or Sum Wgts)	12

Analysis of Variance

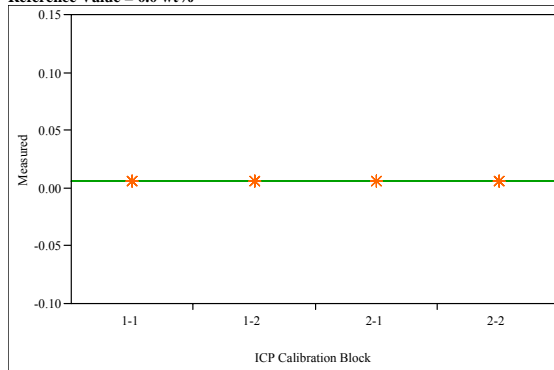
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.05831343	0.019438	11.0734	0.0032
Error	8	0.01404283	0.001755		
C. Total	11	0.07235626			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	4.06872	0.02419	4.0129	4.1245
1-2	3	4.02464	0.02419	3.9689	4.0804
2-1	3	3.93646	0.02419	3.8807	3.9922
2-2	3	3.89237	0.02419	3.8366	3.9482

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=BaO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.005583
Observations (or Sum Wgts)	12

Analysis of Variance

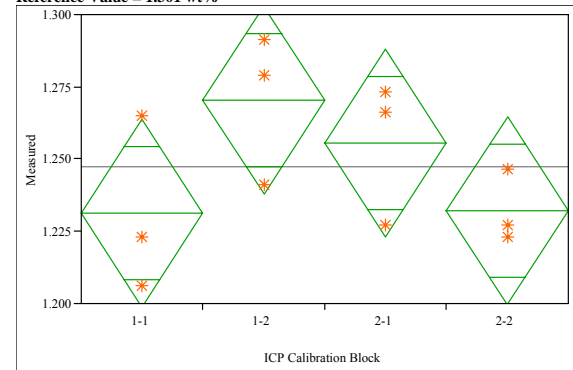
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005583	0	0.00558	0.00558
1-2	3	0.005583	0	0.00558	0.00558
2-1	3	0.005583	0	0.00558	0.00558
2-2	3	0.005583	0	0.00558	0.00558

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=CaO (wt%)
Reference Value = 1.301 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.406451
Adj Rsquare	0.18387
Root Mean Square Error	0.024413
Mean of Response	1.247387
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00326489	0.001088	1.8261	0.2205
Error	8	0.00476780	0.000596		
C. Total	11	0.00803269			

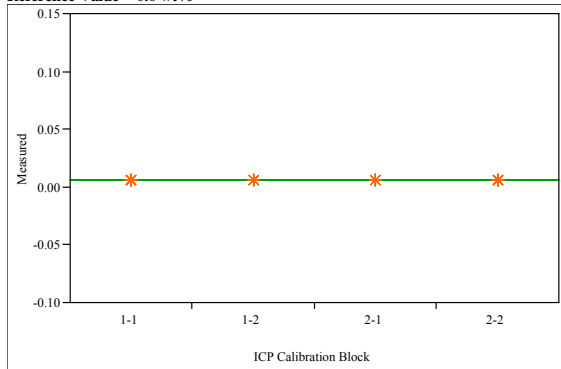
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.23130	0.01409	1.1988	1.2638
1-2	3	1.27047	0.01409	1.2380	1.3030
2-1	3	1.25555	0.01409	1.2230	1.2881
2-2	3	1.23223	0.01409	1.1997	1.2647

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=CdO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005712
Observations (or Sum Wgts) 12

Analysis of Variance

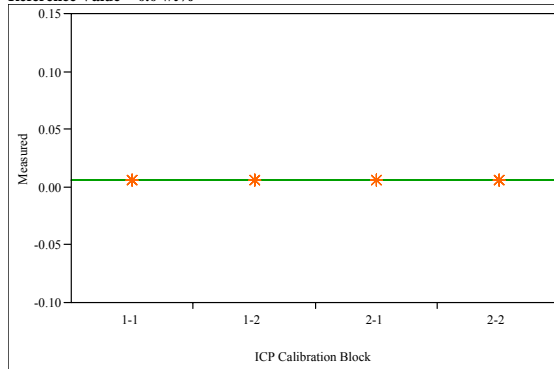
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005712	0	0.00571	0.00571
1-2	3	0.005712	0	0.00571	0.00571
2-1	3	0.005712	0	0.00571	0.00571
2-2	3	0.005712	0	0.00571	0.00571

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Ce2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005857
Observations (or Sum Wgts) 12

Analysis of Variance

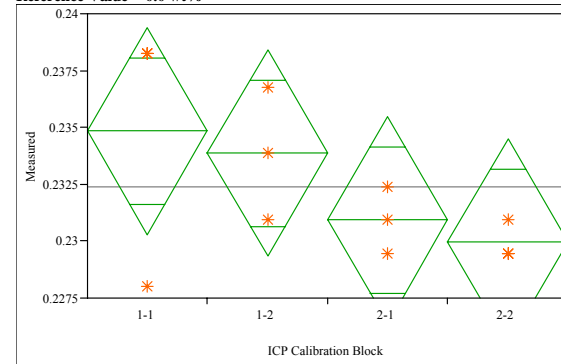
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.005857	0	0.00586	0.00586
1-2	3	0.005857	0	0.00586	0.00586
2-1	3	0.005857	0	0.00586	0.00586
2-2	3	0.005857	0	0.00586	0.00586

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Cr2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.343434
Adj Rsquare 0.097222
Root Mean Square Error 0.003402
Mean of Response 0.232394
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00004842	0.000016	1.3949	0.3132
Error	8	0.00009257	0.000012		
C. Total	11	0.00014099			

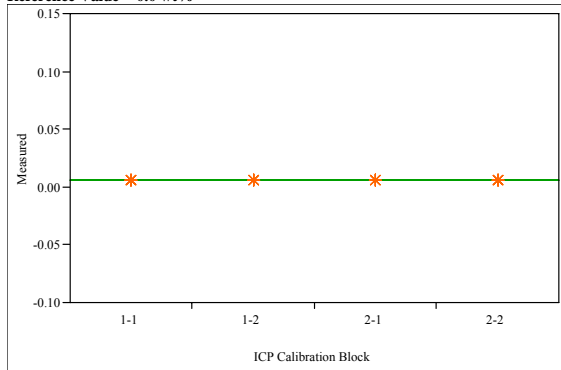
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.234830	0.00196	0.23030	0.23936
1-2	3	0.233856	0.00196	0.22933	0.23838
2-1	3	0.230933	0.00196	0.22640	0.23546
2-2	3	0.229958	0.00196	0.22543	0.23449

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=CuO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare
Adj Rsquare
Root Mean Square Error 0
Mean of Response 0.006259
Observations (or Sum Wgts) 12

Analysis of Variance

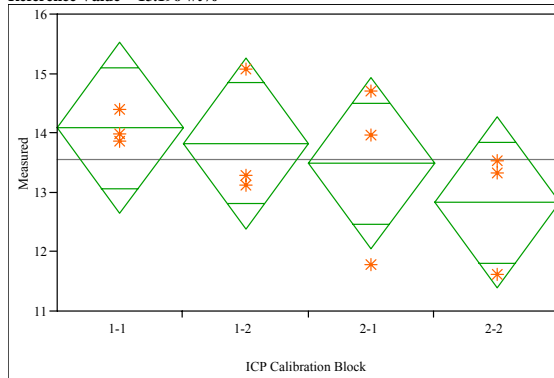
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006259	0	0.00626	0.00626
1-2	3	0.006259	0	0.00626	0.00626
2-1	3	0.006259	0	0.00626	0.00626
2-2	3	0.006259	0	0.00626	0.00626

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Fe2O3 (wt%)
Reference Value = 13.196 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.219988
Adj Rsquare -0.07252
Root Mean Square Error 1.083409
Mean of Response 13.55594
Observations (or Sum Wgts) 12

Analysis of Variance

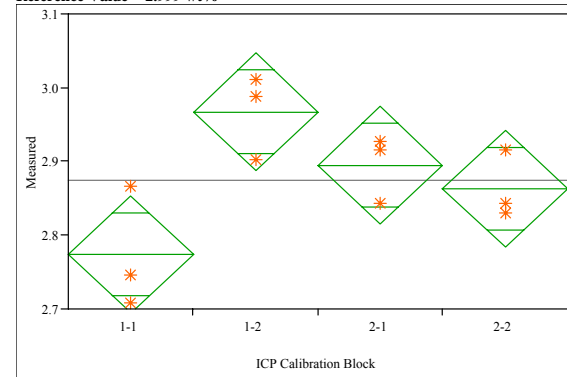
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	2.648329	0.88278	0.7521	0.5513
Error	8	9.390193	1.17377		
C. Total	11	12.038522			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	14.0825	0.62551	12.640	15.525
1-2	3	13.8252	0.62551	12.383	15.268
2-1	3	13.4868	0.62551	12.044	14.929
2-2	3	12.8292	0.62551	11.387	14.272

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=K2O (wt%)
Reference Value = 2.999 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.669848
Adj Rsquare 0.546041
Root Mean Square Error 0.05975
Mean of Response 2.874778
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.05794716	0.019316	5.4104	0.0251
Error	8	0.02856075	0.003570		
C. Total	11	0.08650791			

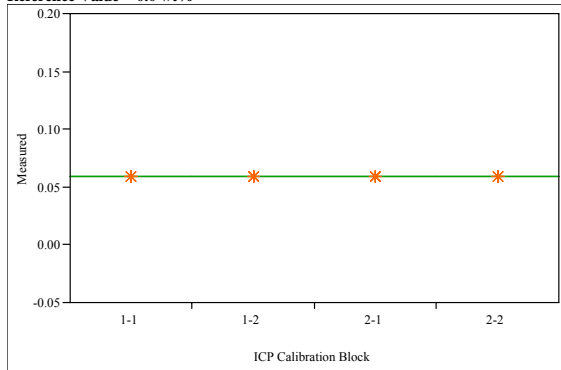
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.77379	0.03450	2.6942	2.8533
1-2	3	2.96733	0.03450	2.8878	3.0469
2-1	3	2.89506	0.03450	2.8155	2.9746
2-2	3	2.86293	0.03450	2.7834	2.9425

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=La2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.05864
Observations (or Sum Wgts)	12

Analysis of Variance

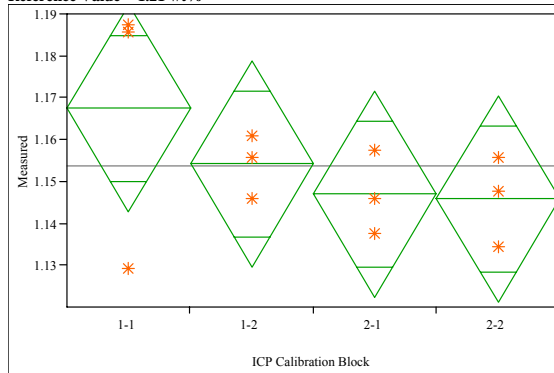
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.058640	0	0.05864	0.05864
1-2	3	0.058640	0	0.05864	0.05864
2-1	3	0.058640	0	0.05864	0.05864
2-2	3	0.058640	0	0.05864	0.05864

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=MgO (wt%)
Reference Value = 1.21 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.244557
Adj Rsquare	-0.03873
Root Mean Square Error	0.018491
Mean of Response	1.153624
Observations (or Sum Wgts)	12

Analysis of Variance

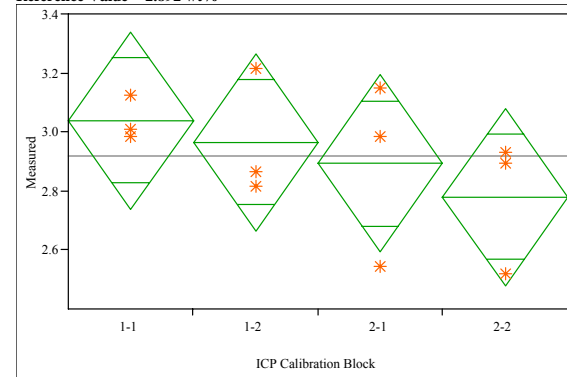
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00088549	0.000295	0.8633	0.4985
Error	8	0.00273529	0.000342		
C. Total	11	0.00362078			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.16744	0.01068	1.1428	1.1921
1-2	3	1.15418	0.01068	1.1296	1.1788
2-1	3	1.14699	0.01068	1.1224	1.1716
2-2	3	1.14589	0.01068	1.1213	1.1705

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=MnO (wt%)
Reference Value = 2.892 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.21161
Adj Rsquare	-0.08404
Root Mean Square Error	0.225498
Mean of Response	2.919188
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.10918754	0.036396	0.7158	0.5697
Error	8	0.40679618	0.050850		
C. Total	11	0.51598371			

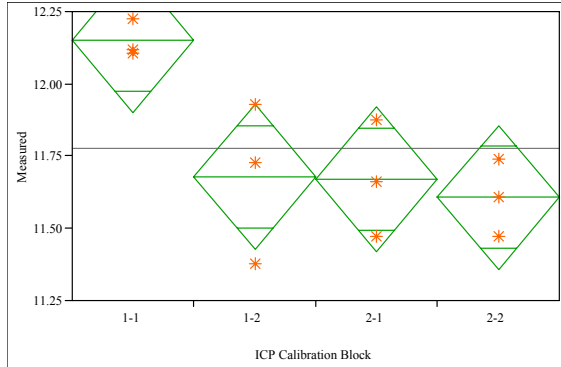
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	3.03862	0.13019	2.7384	3.3388
1-2	3	2.96546	0.13019	2.6652	3.2657
2-1	3	2.89229	0.13019	2.5921	3.1925
2-2	3	2.78038	0.13019	2.4802	3.0806

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Na2O (wt%)
Reference Value = 11.795 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.667442
Adj Rsquare	0.542733
Root Mean Square Error	0.188238
Mean of Response	11.7759
Observations (or Sum Wgts)	12

Analysis of Variance

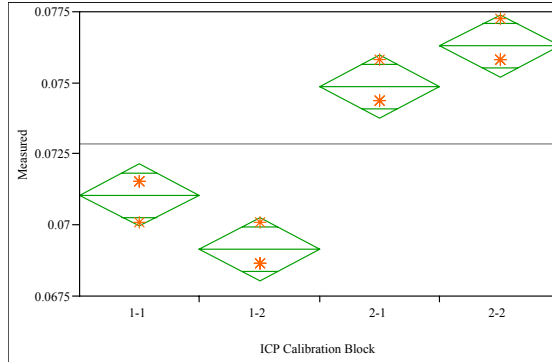
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.56892012	0.189640	5.3520	0.0258
Error	8	0.28346822	0.035434		
C. Total	11	0.85238834			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	12.1500	0.10868	11.899	12.401
1-2	3	11.6782	0.10868	11.428	11.929
2-1	3	11.6692	0.10868	11.419	11.920
2-2	3	11.6063	0.10868	11.356	11.857

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Nb2O5 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.947627
Adj Rsquare	0.927987
Root Mean Square Error	0.000826
Mean of Response	0.072836
Observations (or Sum Wgts)	12

Analysis of Variance

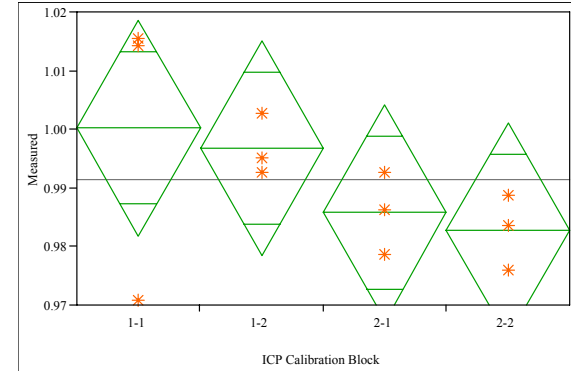
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00009874	0.000033	48.2500	<.0001
Error	8	0.00000546	6.821e-7		
C. Total	11	0.00010419			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.071048	0.00048	0.06995	0.07215
1-2	3	0.069141	0.00048	0.06804	0.07024
2-1	3	0.074863	0.00048	0.07376	0.07596
2-2	3	0.076293	0.00048	0.07519	0.07739

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM, Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=NiO (wt%)
Reference Value = 1.12 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.29478
Adj Rsquare	0.030322
Root Mean Square Error	0.013794
Mean of Response	0.991384
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00063623	0.000212	1.1147	0.3986
Error	8	0.00152210	0.000190		
C. Total	11	0.00215833			

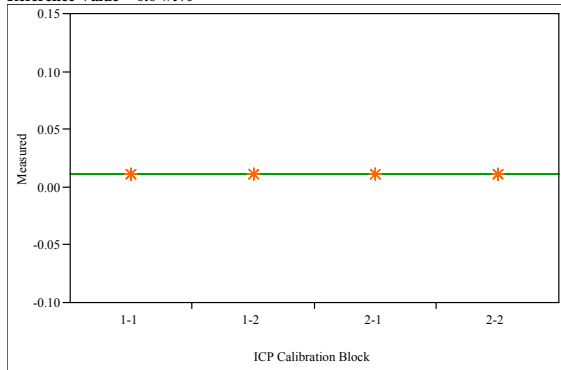
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	1.00019	0.00796	0.98182	1.0185
1-2	3	0.99679	0.00796	0.97843	1.0152
2-1	3	0.98576	0.00796	0.96740	1.0041
2-2	3	0.98279	0.00796	0.96443	1.0012

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=PbO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0
Adj Rsquare -0.375
Root Mean Square Error 2.12e-18
Mean of Response 0.010772
Observations (or Sum Wgts) 12

Analysis of Variance

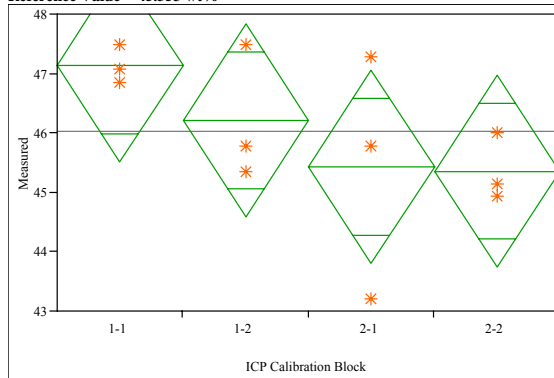
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	0.0000	1.0000
Error	8	3.6111e-35	4.514e-36		
C. Total	11	3.6111e-35			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.010772	1.227e-18	0.01077	0.01077
1-2	3	0.010772	1.227e-18	0.01077	0.01077
2-1	3	0.010772	1.227e-18	0.01077	0.01077
2-2	3	0.010772	1.227e-18	0.01077	0.01077

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=SiO2 (wt%)
Reference Value = 45.353 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.344566
Adj Rsquare 0.098778
Root Mean Square Error 1.218024
Mean of Response 46.03061
Observations (or Sum Wgts) 12

Analysis of Variance

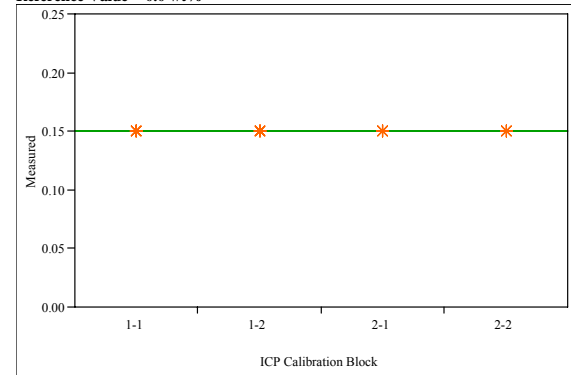
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	6.239437	2.07981	1.4019	0.3114
Error	8	11.868661	1.48358		
C. Total	11	18.108098			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	47.1359	0.70323	45.514	48.758
1-2	3	46.2089	0.70323	44.587	47.831
2-1	3	45.4245	0.70323	43.803	47.046
2-2	3	45.3532	0.70323	43.732	46.975

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=SO4 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.149795
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

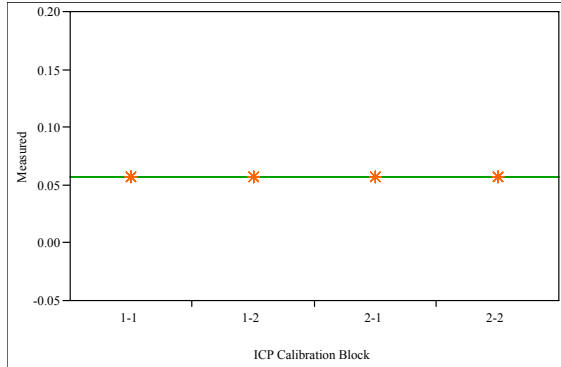
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.149795	0	0.14980	0.14980
1-2	3	0.149795	0	0.14980	0.14980
2-1	3	0.149795	0	0.14980	0.14980
2-2	3	0.149795	0	0.14980	0.14980

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=ThO2 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	.
Adj Rsquare	.
Root Mean Square Error	0
Mean of Response	0.056895
Observations (or Sum Wgts)	12

Analysis of Variance

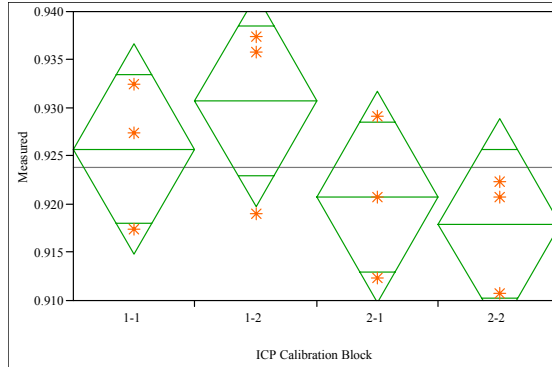
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0	.	.
Error	8	0	0	.	.
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.056895	0	0.05690	0.05690
1-2	3	0.056895	0	0.05690	0.05690
2-1	3	0.056895	0	0.05690	0.05690
2-2	3	0.056895	0	0.05690	0.05690

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=TiO2 (wt%)
Reference Value = 1.049 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.346025
Adj Rsquare	0.100784
Root Mean Square Error	0.008228
Mean of Response	0.923794
Observations (or Sum Wgts)	12

Analysis of Variance

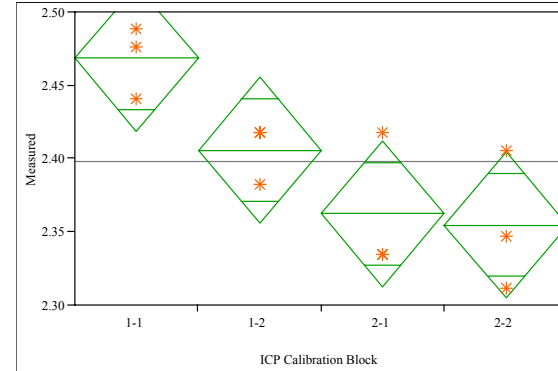
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00028657	0.000096	1.4110	0.3090
Error	8	0.00054161	0.000068		
C. Total	11	0.00082818			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.925740	0.00475	0.91479	0.93669
1-2	3	0.930744	0.00475	0.91979	0.94170
2-1	3	0.920736	0.00475	0.90978	0.93169
2-2	3	0.917956	0.00475	0.90700	0.92891

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=U3O8 (wt%)
Reference Value = 2.406 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.688312
Adj Rsquare	0.571429
Root Mean Square Error	0.03729
Mean of Response	2.397707
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.02456572	0.008189	5.8889	0.0201
Error	8	0.01112410	0.001391		
C. Total	11	0.03568982			

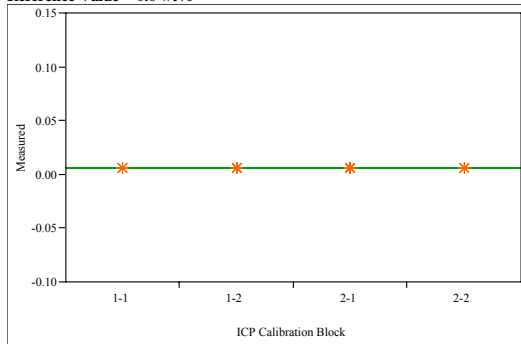
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.46846	0.02153	2.4188	2.5181
1-2	3	2.40557	0.02153	2.3559	2.4552
2-1	3	2.36233	0.02153	2.3127	2.4120
2-2	3	2.35447	0.02153	2.3048	2.4041

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=ZnO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.006224
Observations (or Sum Wgts) 12

Analysis of Variance

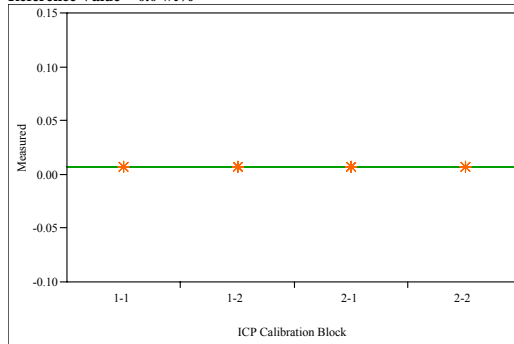
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006224	0	0.00622	0.00622
1-2	3	0.006224	0	0.00622	0.00622
2-1	3	0.006224	0	0.00622	0.00622
2-2	3	0.006224	0	0.00622	0.00622

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=ZrO2 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.006754
Observations (or Sum Wgts) 12

Analysis of Variance

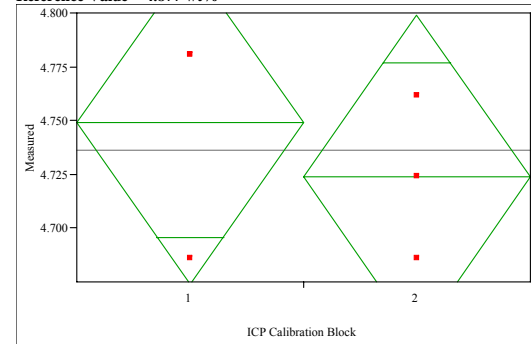
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0	0		
Error	8	0	0		
C. Total	11	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	0.006754	0	0.00675	0.00675
1-2	3	0.006754	0	0.00675	0.00675
2-1	3	0.006754	0	0.00675	0.00675
2-2	3	0.006754	0	0.00675	0.00675

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Al2O3 (wt%)
Reference Value = 4.877 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.097561
Adj Rsquare -0.12805
Root Mean Square Error 0.046922
Mean of Response 4.736347
Observations (or Sum Wgts) 6

t Test

2-1

Assuming equal variances

Difference -0.02519 t Ratio -0.6576
Std Err Dif 0.03831 DF 4
Upper CL Dif 0.08118 Prob > |t| 0.5467
Lower CL Dif -0.13156 Prob > t 0.7266
Confidence 0.95 Prob < t 0.2734

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00095206	0.000952	0.4324	0.5467
Error	4	0.00880652	0.002202		
C. Total	5	0.00975857			

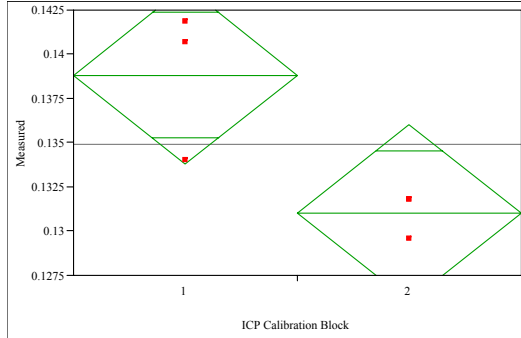
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	4.74894	0.02709	4.6737	4.8242
2	3	4.72375	0.02709	4.6485	4.7990

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=BaO (wt%)
Reference Value = 0.151 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.701113
Adj Rsquare 0.626391
Root Mean Square Error 0.003125
Mean of Response 0.13491
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference -0.00782 t Ratio -3.06316
Std Err Dif 0.00255 DF 4
Upper CL Dif -0.00073 Prob > |t| 0.0375
Lower CL Dif -0.01490 Prob > t 0.9812
Confidence 0.95 Prob < t 0.0188

Analysis of Variance

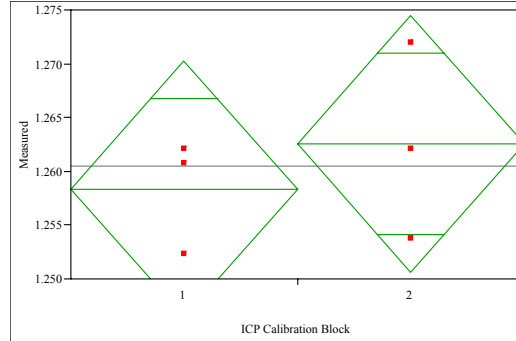
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00009162	0.000092	9.3830	0.0375
Error	4	0.00003906	9.765e-6		
C. Total	5	0.00013068			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.138818	0.00180	0.13381	0.14383
2	3	0.131003	0.00180	0.12599	0.13601

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=CaO (wt%)
Reference Value = 1.220 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.106439
Adj Rsquare -0.11695
Root Mean Square Error 0.007448
Mean of Response 1.260446
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0.00420 t Ratio 0.690268
Std Err Dif 0.00608 DF 4
Upper CL Dif 0.02108 Prob > |t| 0.5280
Lower CL Dif -0.01269 Prob > t 0.2640
Confidence 0.95 Prob < t 0.7360

Analysis of Variance

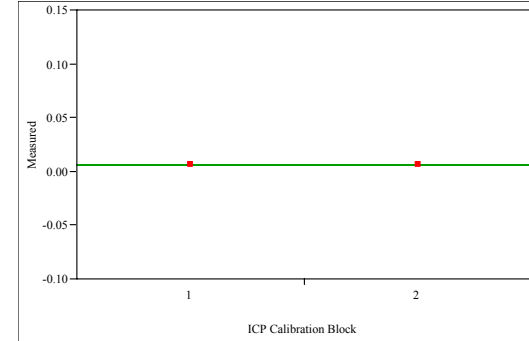
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00002643	0.000026	0.4765	0.5280
Error	4	0.00022188	0.000055		
C. Total	5	0.00024831			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	1.25835	0.00430	1.2464	1.2703
2	3	1.26254	0.00430	1.2506	1.2745

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Ce2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005857
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0 t Ratio .
Std Err Dif 0 DF 4
Upper CL Dif 0 Prob > |t| .
Lower CL Dif 0 Prob > t .
Confidence 0.95 Prob < t .

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0	0		
Error	4	0	0		
C. Total	5	0			

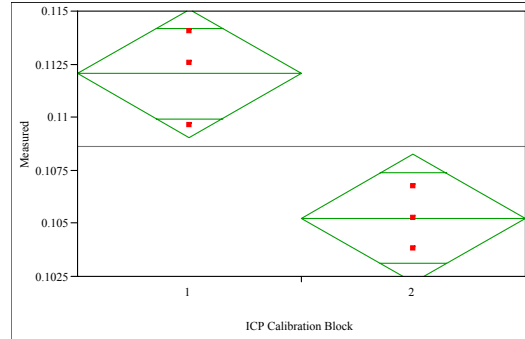
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.005857	0	0.00586	0.00586
2	3	0.005857	0	0.00586	0.00586

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Cr2O3 (wt%)
Reference Value = 0.107 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.830508
Adj Rsquare 0.788136
Root Mean Square Error 0.001887
Mean of Response 0.108646
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference -0.00682 t Ratio -4.42719
Std Err Dif 0.00154 DF 4
Upper CL Dif -0.00254 Prob > |t| 0.0114
Lower CL Dif -0.01110 Prob > t 0.9943
Confidence 0.95 Prob < t 0.0057

Analysis of Variance

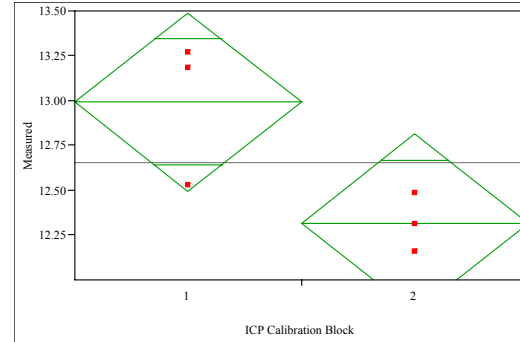
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00006978	0.000070	19.6000	0.0114
Error	4	0.00001424	3.56e-6		
C. Total	5	0.00008403			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.112056	0.00109	0.10903	0.11508
2	3	0.105235	0.00109	0.10221	0.10826

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Fe2O3 (wt%)
Reference Value = 12.839 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.640859
Adj Rsquare 0.551074
Root Mean Square Error 0.310226
Mean of Response 12.65285
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference -0.6767 t Ratio -2.67165
Std Err Dif 0.2533 DF 4
Upper CL Dif 0.0265 Prob > |t| 0.0557
Lower CL Dif -1.3800 Prob > t 0.9721
Confidence 0.95 Prob < t 0.0279

Analysis of Variance

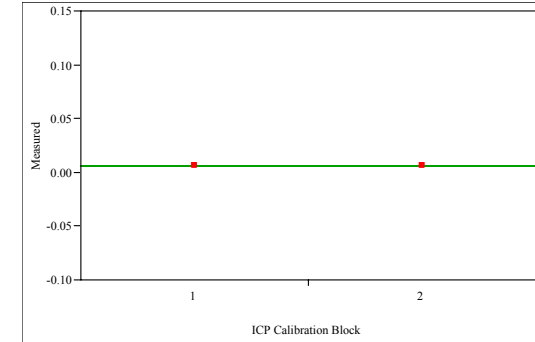
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.6869344	0.686934	7.1377	0.0557
Error	4	0.3849613	0.096240		
C. Total	5	1.0718957			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	12.9912	0.17911	12.494	13.488
2	3	12.3145	0.17911	11.817	12.812

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=HfO2 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005897
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0 t Ratio .
Std Err Dif 0 DF 4
Upper CL Dif 0 Prob > |t| .
Lower CL Dif 0 Prob > t .
Confidence 0.95 Prob < t .

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0	0		
Error	4	0	0		
C. Total	5	0			

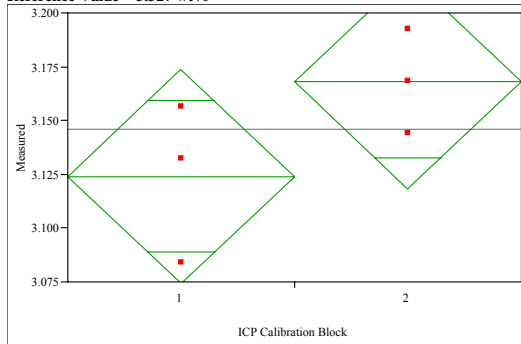
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.005897	0	0.00590	0.00590
2	3	0.005897	0	0.00590	0.00590

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=K2O (wt%)
Reference Value = 3.327 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.430605
Adj Rsquare 0.288256
Root Mean Square Error 0.031103
Mean of Response 3.146014
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0.04417 t Ratio 1.739253
Std Err Dif 0.02540 DF 4
Upper CL Dif 0.11468 Prob > |t| 0.1570
Lower CL Dif -0.02634 Prob > t 0.0785
Confidence 0.95 Prob < t 0.9215

Analysis of Variance

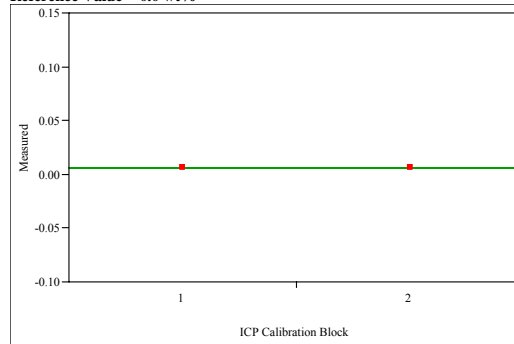
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00292631	0.002926	3.0250	0.1570
Error	4	0.00386950	0.000967		
C. Total	5	0.00679580			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	3.12393	0.01796	3.0741	3.1738
2	3	3.16810	0.01796	3.1182	3.2180

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=La2O3 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.005864
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0 t Ratio .
Std Err Dif 0 DF 4
Upper CL Dif 0 Prob > |t| .
Lower CL Dif 0 Prob > t .
Confidence 0.95 Prob < t .

Analysis of Variance

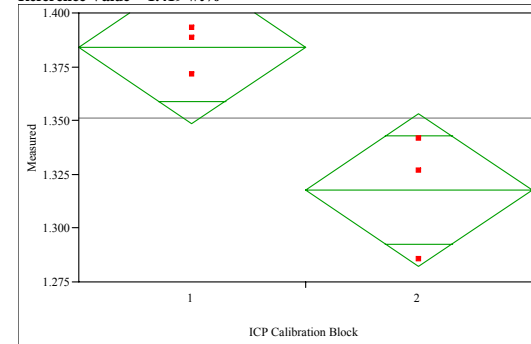
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0	0		
Error	4	0	0		
C. Total	5	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.005864	0	0.00586	0.00586
2	3	0.005864	0	0.00586	0.00586

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=MgO (wt%)
Reference Value = 1.419 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.770878
Adj Rsquare 0.713597
Root Mean Square Error 0.022145
Mean of Response 1.350962
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference -0.06633 t Ratio -3.66851
Std Err Dif 0.01808 DF 4
Upper CL Dif -0.01613 Prob > |t| 0.0214
Lower CL Dif -0.11653 Prob > t 0.9893
Confidence 0.95 Prob < t 0.0107

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00659990	0.006600	13.4579	0.0214
Error	4	0.00196164	0.000490		
C. Total	5	0.00856154			

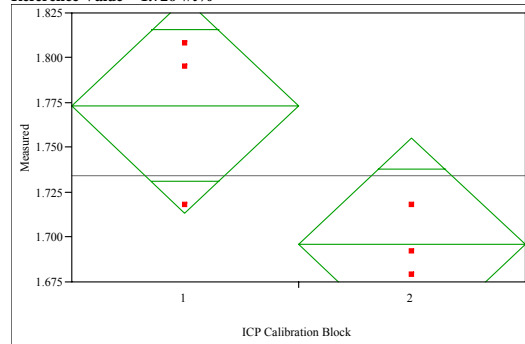
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	1.38413	0.01279	1.3486	1.4196
2	3	1.31780	0.01279	1.2823	1.3533

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=MnO (wt%)
Reference Value = 1.726 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.618321
Adj Rsquare	0.522901
Root Mean Square Error	0.037274
Mean of Response	1.734512
Observations (or Sum Wgts)	6

**t Test
2-1**

Assuming equal variances

Difference	-0.07747	t Ratio	-2.54558
Std Err Dif	0.03043	DF	4
Upper CL Dif	0.00703	Prob > t	0.0636
Lower CL Dif	-0.16197	Prob > t	0.9682
Confidence	0.95	Prob < t	0.0318

Analysis of Variance

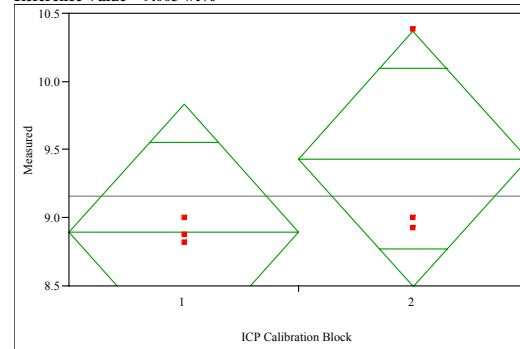
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00900287	0.009003	6.4800	0.0636
Error	4	0.00555732	0.001389		
C. Total	5	0.01456019			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	1.77325	0.02152	1.7135	1.8330
2	3	1.69578	0.02152	1.6360	1.7555

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Na2O (wt%)
Reference Value = 9.003 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.241903
Adj Rsquare	0.052379
Root Mean Square Error	0.584531
Mean of Response	9.161907
Observations (or Sum Wgts)	6

**t Test
2-1**

Assuming equal variances

Difference	0.5392	t Ratio	1.129765
Std Err Dif	0.4773	DF	4
Upper CL Dif	1.8643	Prob > t	0.3217
Lower CL Dif	-0.7859	Prob > t	0.1609
Confidence	0.95	Prob < t	0.8391

Analysis of Variance

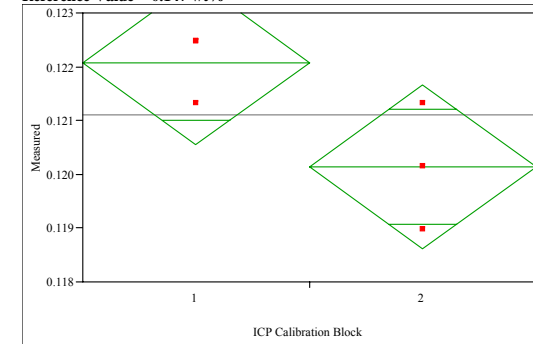
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.4361050	0.436105	1.2764	0.3217
Error	4	1.3667045	0.341676		
C. Total	5	1.8028094			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	8.89231	0.33748	7.9553	9.829
2	3	9.43151	0.33748	8.4945	10.368

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Nd2O3 (wt%)
Reference Value = 0.147 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.609756
Adj Rsquare	0.512195
Root Mean Square Error	0.000952
Mean of Response	0.121111
Observations (or Sum Wgts)	6

**t Test
2-1**

Assuming equal variances

Difference	-0.00194	t Ratio	-2.5
Std Err Dif	0.00078	DF	4
Upper CL Dif	0.00021	Prob > t	0.0668
Lower CL Dif	-0.00410	Prob > t	0.9666
Confidence	0.95	Prob < t	0.0334

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	5.6687e-6	5.6687e-6	6.2500	0.0668
Error	4	3.62797e-6	9.0699e-7		
C. Total	5	9.29667e-6			

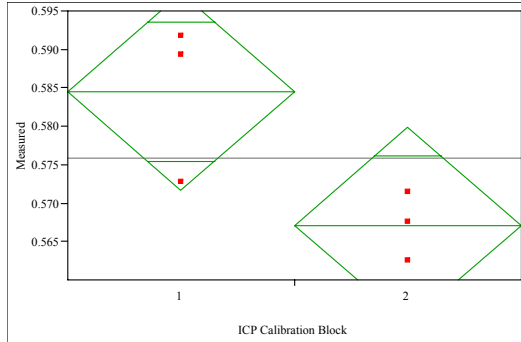
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.122083	0.00055	0.12056	0.12361
2	3	0.120139	0.00055	0.11861	0.12167

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=NiO (wt%)
Reference Value = 0.751 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.640381
Adj Rsquare	0.550476
Root Mean Square Error	0.007981
Mean of Response	0.575806
Observations (or Sum Wgts)	6

**t Test
2-1**

Assuming equal variances

Difference	-0.01739	t Ratio	-2.66887
Std Err Dif	0.00652	DF	4
Upper CL Dif	0.00070	Prob > t	0.0559
Lower CL Dif	-0.03548	Prob > t	0.9721
Confidence	0.95	Prob < t	0.0279

Analysis of Variance

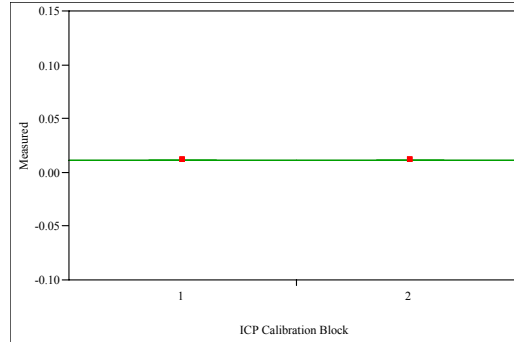
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00045366	0.000454	7.1229	0.0559
Error	4	0.00025476	0.000064		
C. Total	5	0.00070842			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.584502	0.00461	0.57171	0.59729
2	3	0.567111	0.00461	0.55432	0.57990

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=PbO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0
Adj Rsquare	-0.25
Root Mean Square Error	2.12e-18
Mean of Response	0.010772
Observations (or Sum Wgts)	6

**t Test
2-1**

Assuming equal variances

Difference	0	t Ratio	0
Std Err Dif	1.735e-18	DF	4
Upper CL Dif	4.816e-18	Prob > t	1.0000
Lower CL Dif	-4.82e-18	Prob > t	0.5000
Confidence	0.95	Prob < t	0.5000

Analysis of Variance

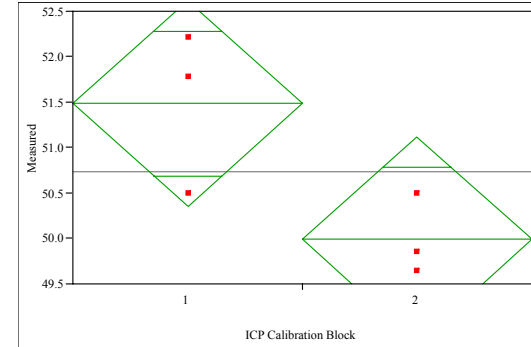
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0	0	0.0000	1.0000
Error	4	1.8056e-35	4.514e-36		
C. Total	5	1.8056e-35			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.010772	1.227e-18	0.01077	0.01077
2	3	0.010772	1.227e-18	0.01077	0.01077

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=SiO2 (wt%)
Reference Value = 50.22 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.629101
Adj Rsquare	0.536377
Root Mean Square Error	0.70413
Mean of Response	50.73707
Observations (or Sum Wgts)	6

**t Test
2-1**

Assuming equal variances

Difference	-1.4975	t Ratio	-2.60473
Std Err Dif	0.5749	DF	4
Upper CL Dif	0.0987	Prob > t	0.0598
Lower CL Dif	-3.0937	Prob > t	0.9701
Confidence	0.95	Prob < t	0.0299

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	3.3638043	3.36380	6.7846	0.0598
Error	4	1.9831953	0.49580		
C. Total	5	5.3469996			

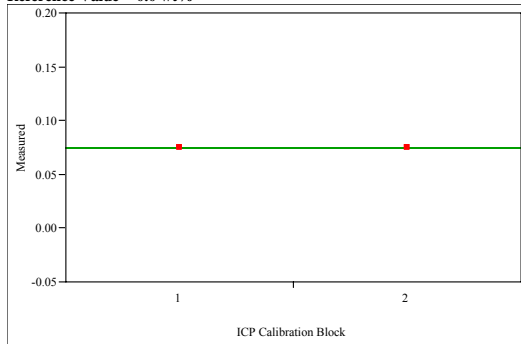
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	51.4858	0.40653	50.357	52.615
2	3	49.9883	0.40653	48.860	51.117

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=SO4 (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.074898
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0 t Ratio .
Std Err Dif 0 DF 4
Upper CL Dif 0 Prob > |t| .
Lower CL Dif 0 Prob > t .
Confidence 0.95 Prob < t .

Analysis of Variance

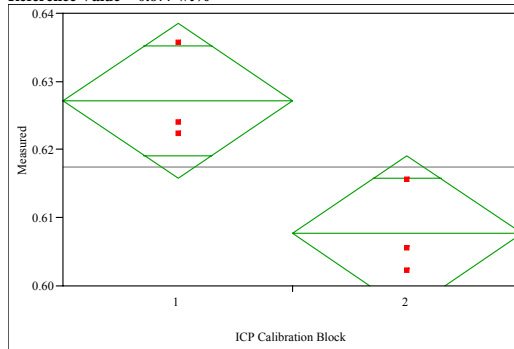
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0	0		
Error	4	0	0		
C. Total	5	0			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.074898	0	0.07490	0.07490
2	3	0.074898	0	0.07490	0.07490

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=TiO2 (wt%)
Reference Value = 0.677 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.737508
Adj Rsquare 0.671884
Root Mean Square Error 0.007109
Mean of Response 0.617438
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference -0.01946 t Ratio -3.35239
Std Err Dif 0.00580 DF 4
Upper CL Dif -0.00334 Prob > |t| 0.0285
Lower CL Dif -0.03558 Prob > t 0.9857
Confidence 0.95 Prob < t 0.0143

Analysis of Variance

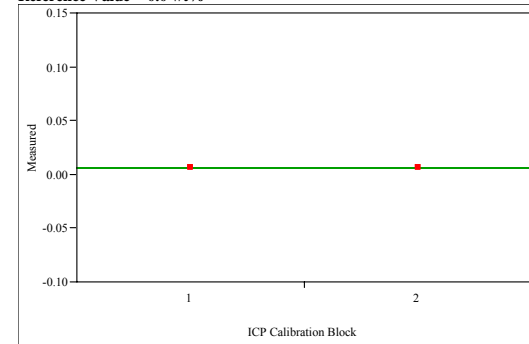
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00056804	0.000568	11.2385	0.0285
Error	4	0.00020217	0.000051		
C. Total	5	0.00077021			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.627168	0.00410	0.61577	0.63856
2	3	0.607708	0.00410	0.59631	0.61910

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=ZnO (wt%)
Reference Value = 0.0 wt%



**Oneway Anova
Summary of Fit**

Rsquare .
Adj Rsquare .
Root Mean Square Error 0
Mean of Response 0.006224
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference 0 t Ratio .
Std Err Dif 0 DF 4
Upper CL Dif 0 Prob > |t| .
Lower CL Dif 0 Prob > t .
Confidence 0.95 Prob < t .

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0	0		
Error	4	0	0		
C. Total	5	0			

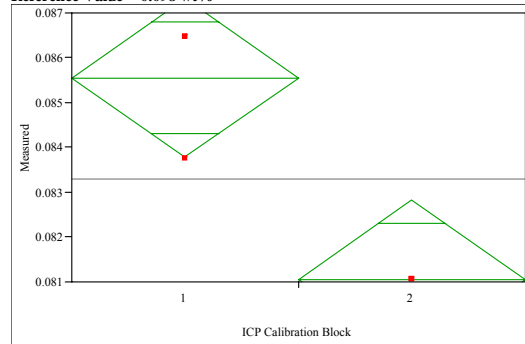
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.006224	0	0.00622	0.00622
2	3	0.006224	0	0.00622	0.00622

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=LM,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=ZrO2 (wt%)
Reference Value = 0.098 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.862069
Adj Rsquare 0.827586
Root Mean Square Error 0.001103
Mean of Response 0.083299
Observations (or Sum Wgts) 6

**t Test
2-1**

Assuming equal variances

Difference -0.00450 t Ratio -5
Std Err Dif 0.00090 DF 4
Upper CL Dif -0.00200 Prob > |t| 0.0075
Lower CL Dif -0.00700 Prob > t 0.9963
Confidence 0.95 Prob < t 0.0037

Analysis of Variance

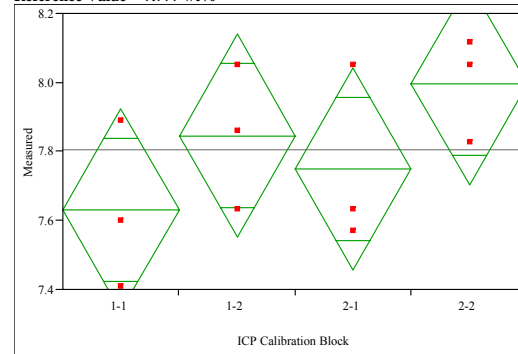
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00003041	0.000030	25.0000	0.0075
Error	4	0.00000487	1.216e-6		
C. Total	5	0.00003528			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	0.085551	0.00064	0.08378	0.08732
2	3	0.081048	0.00064	0.07928	0.08282

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=B2O3 (wt%)
Reference Value = 7.777 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.354968
Adj Rsquare 0.113081
Root Mean Square Error 0.220745
Mean of Response 7.805574
Observations (or Sum Wgts) 12

Analysis of Variance

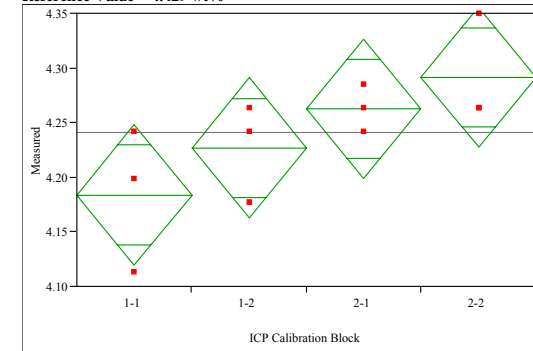
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.21452615	0.071509	1.4675	0.2947
Error	8	0.38982763	0.048728		
C. Total	11	0.60435378			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	7.63116	0.12745	7.3373	7.9251
1-2	3	7.84582	0.12745	7.5519	8.1397
2-1	3	7.74923	0.12745	7.4553	8.0431
2-2	3	7.99609	0.12745	7.7022	8.2900

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Batch 1, Oxide=Li2O (wt%)
Reference Value = 4.429 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.512195
Adj Rsquare 0.329268
Root Mean Square Error 0.04814
Mean of Response 4.241213
Observations (or Sum Wgts) 12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.01946691	0.006489	2.8000	0.1086
Error	8	0.01853991	0.002317		
C. Total	11	0.03800682			

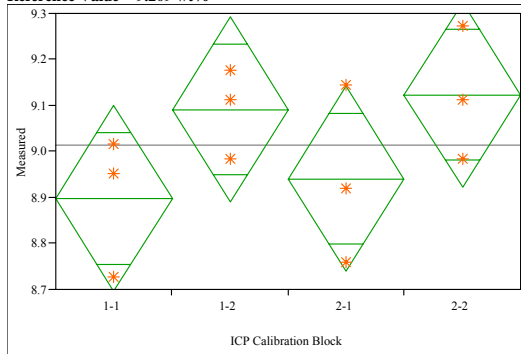
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	4.18380	0.02779	4.1197	4.2479
1-2	3	4.22686	0.02779	4.1628	4.2910
2-1	3	4.26274	0.02779	4.1986	4.3268
2-2	3	4.29145	0.02779	4.2274	4.3555

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=B2O3 (wt%)
Reference Value = 9.209 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.375552
Adj Rsquare	0.141384
Root Mean Square Error	0.151312
Mean of Response	9.013037
Observations (or Sum Wgts)	12

Analysis of Variance

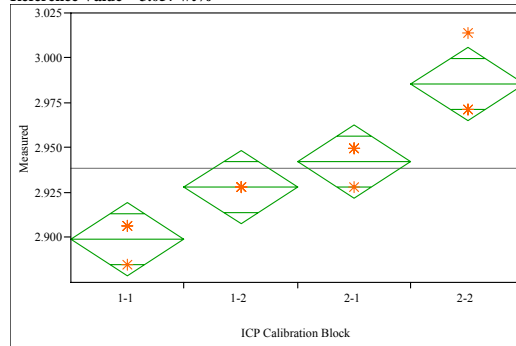
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.11015741	0.036719	1.6038	0.2634
Error	8	0.18316369	0.022895		
C. Total	11	0.29332110			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	8.89766	0.08736	8.6962	9.0991
1-2	3	9.09085	0.08736	8.8894	9.2923
2-1	3	8.94059	0.08736	8.7391	9.1420
2-2	3	9.12305	0.08736	8.9216	9.3245

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=2, Type=Ustd, Oxide=Li2O (wt%)
Reference Value = 3.057 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.862069
Adj Rsquare	0.810345
Root Mean Square Error	0.015223
Mean of Response	2.938708
Observations (or Sum Wgts)	12

Analysis of Variance

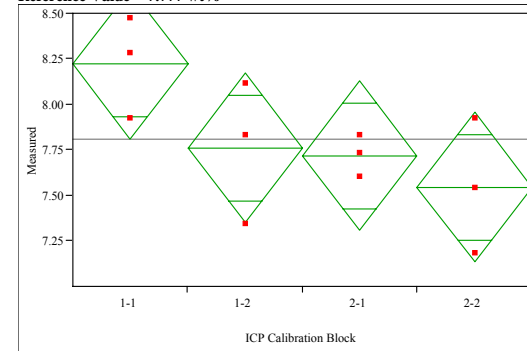
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.01158745	0.003862	16.6667	0.0008
Error	8	0.00185399	0.000232		
C. Total	11	0.01344144			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.89924	0.00879	2.8790	2.9195
1-2	3	2.92794	0.00879	2.9077	2.9482
2-1	3	2.94230	0.00879	2.9220	2.9626
2-2	3	2.98535	0.00879	2.9651	3.0056

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=B2O3 (wt%)
Reference Value = 7.777 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.497569
Adj Rsquare	0.309157
Root Mean Square Error	0.308002
Mean of Response	7.810941
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.7515759	0.250525	2.6409	0.1210
Error	8	0.7589197	0.094865		
C. Total	11	1.5104957			

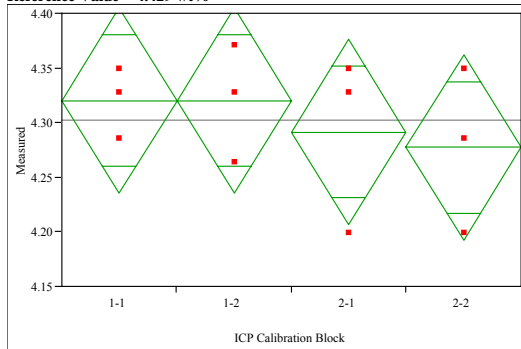
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	8.22148	0.17782	7.8114	8.6315
1-2	3	7.75996	0.17782	7.3499	8.1700
2-1	3	7.71703	0.17782	7.3070	8.1271
2-2	3	7.54530	0.17782	7.1352	7.9554

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Batch 1, Oxide=Li2O (wt%)
Reference Value = 4.429 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.112971
Adj Rsquare	-0.21967
Root Mean Square Error	0.063986
Mean of Response	4.302212
Observations (or Sum Wgts)	12

Analysis of Variance

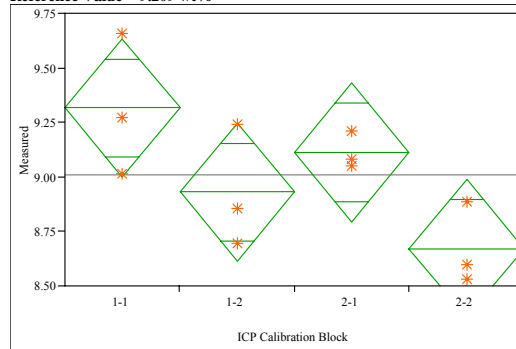
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00417148	0.001390	0.3396	0.7975
Error	8	0.03275385	0.004094		
C. Total	11	0.03692533			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	4.32015	0.03694	4.2350	4.4053
1-2	3	4.32015	0.03694	4.2350	4.4053
2-1	3	4.29145	0.03694	4.2063	4.3766
2-2	3	4.27709	0.03694	4.1919	4.3623

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=B2O3 (wt%)
Reference Value = 9.209 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.597519
Adj Rsquare	0.446589
Root Mean Square Error	0.238251
Mean of Response	9.00767
Observations (or Sum Wgts)	12

Analysis of Variance

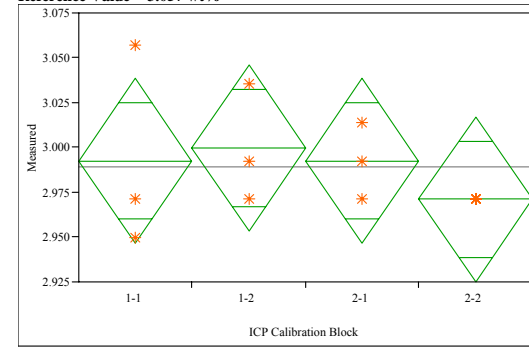
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.6741633	0.224721	3.9589	0.0531
Error	8	0.4541077	0.056763		
C. Total	11	1.1282710			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	9.31624	0.13755	8.9990	9.6334
1-2	3	8.92986	0.13755	8.6127	9.2471
2-1	3	9.11232	0.13755	8.7951	9.4295
2-2	3	8.67226	0.13755	8.3551	8.9895

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00003, Set=3, Type=Ustd, Oxide=Li2O (wt%)
Reference Value = 3.057 wt%



**Oneway Anova
Summary of Fit**

Rsquare	0.126761
Adj Rsquare	-0.2007
Root Mean Square Error	0.034603
Mean of Response	2.988943
Observations (or Sum Wgts)	12

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	3	0.00139049	0.000463	0.3871	0.7655
Error	8	0.00957896	0.001197		
C. Total	11	0.01096945			

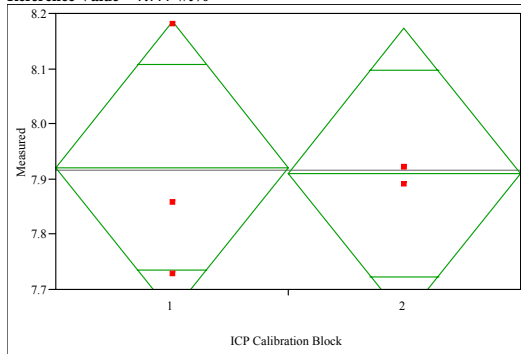
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1-1	3	2.99253	0.01998	2.9465	3.0386
1-2	3	2.99971	0.01998	2.9536	3.0458
2-1	3	2.99253	0.01998	2.9465	3.0386
2-2	3	2.97100	0.01998	2.9249	3.0171

Std Error uses a pooled estimate of error variance

Exhibit A3. PSAL Measurements by ICP Calibration Block for Samples of the Standard Glasses by Preparation Method by Set by Analytical Plan Memo. (continued)

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=B2O3 (wt%)
Reference Value = 7.777 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.00159
Adj Rsquare -0.24801
Root Mean Square Error 0.164709
Mean of Response 7.915588
Observations (or Sum Wgts) 6

t Test

2-1

Assuming equal variances

Difference -0.01073 t Ratio -0.07981
Std Err Dif 0.13448 DF 4
Upper CL Dif 0.36265 Prob > |t| 0.9402
Lower CL Dif -0.38412 Prob > t 0.5299
Confidence 0.95 Prob < t 0.4701

Analysis of Variance

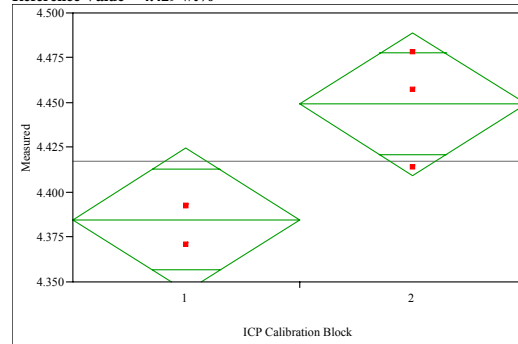
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00017280	0.000173	0.0064	0.9402
Error	4	0.10851585	0.027129		
C. Total	5	0.10868864			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	7.92095	0.09509	7.6569	8.1850
2	3	7.91022	0.09509	7.6462	8.1742

Std Error uses a pooled estimate of error variance

Oneway Analysis of Measured By ICP Calibration Block Prep=PF,
Plan =SRNL-SCS-2008-00043, Set=1, Type=Batch 1, Oxide=Li2O (wt%)
Reference Value = 4.429 wt%



**Oneway Anova
Summary of Fit**

Rsquare 0.716814
Adj Rsquare 0.646018
Root Mean Square Error 0.02486
Mean of Response 4.417033
Observations (or Sum Wgts) 6

t Test

2-1

Assuming equal variances

Difference 0.064587 t Ratio 3.181981
Std Err Dif 0.020298 DF 4
Upper CL Dif 0.120943 Prob > |t| 0.0335
Lower CL Dif 0.008231 Prob > t 0.0167
Confidence 0.95 Prob < t 0.9833

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
ICP Calibration Block	1	0.00625722	0.006257	10.1250	0.0335
Error	4	0.00247199	0.000618		
C. Total	5	0.00872921			

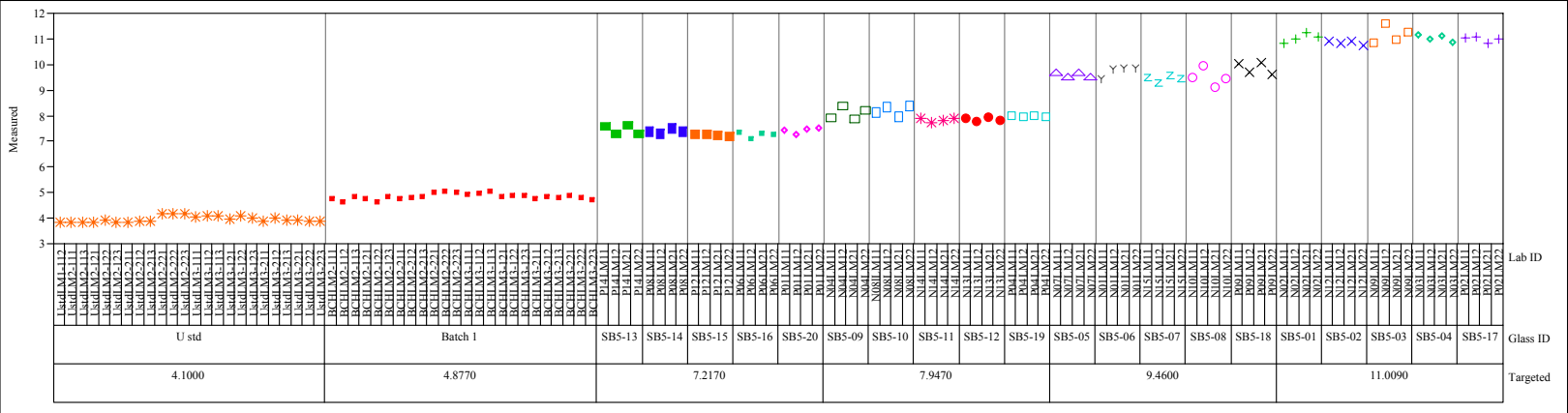
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	4.38474	0.01435	4.3449	4.4246
2	3	4.44933	0.01435	4.4095	4.4892

Std Error uses a pooled estimate of error variance

Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps.

Analytical Plan=SRNL-SCS-2008-00003, Prep=LM, Oxide=Al2O3 (wt%)
 Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Al2O3 (wt%)
 Variability Chart for Measured bc

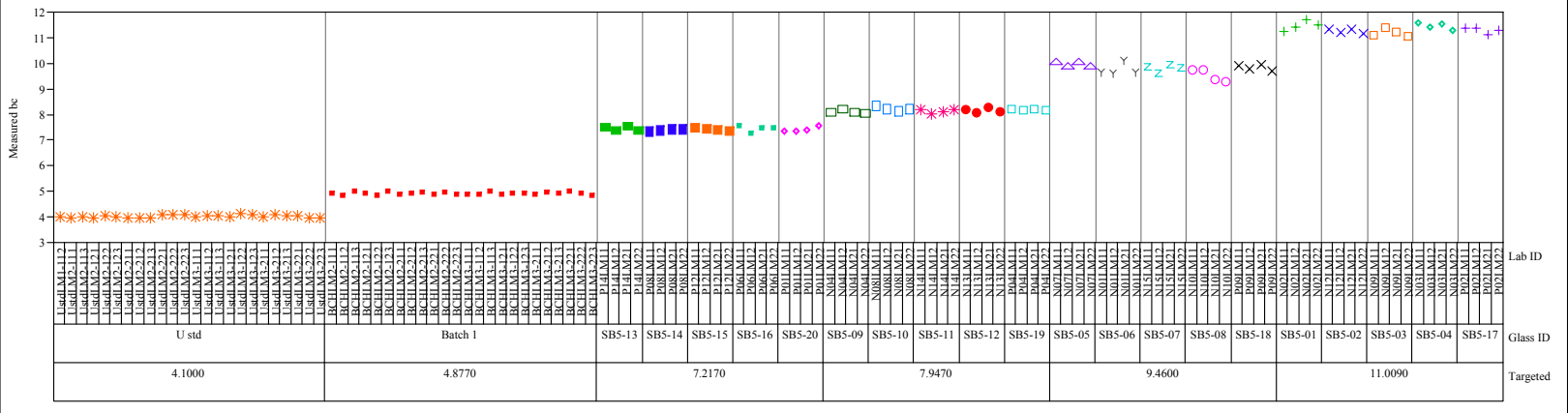
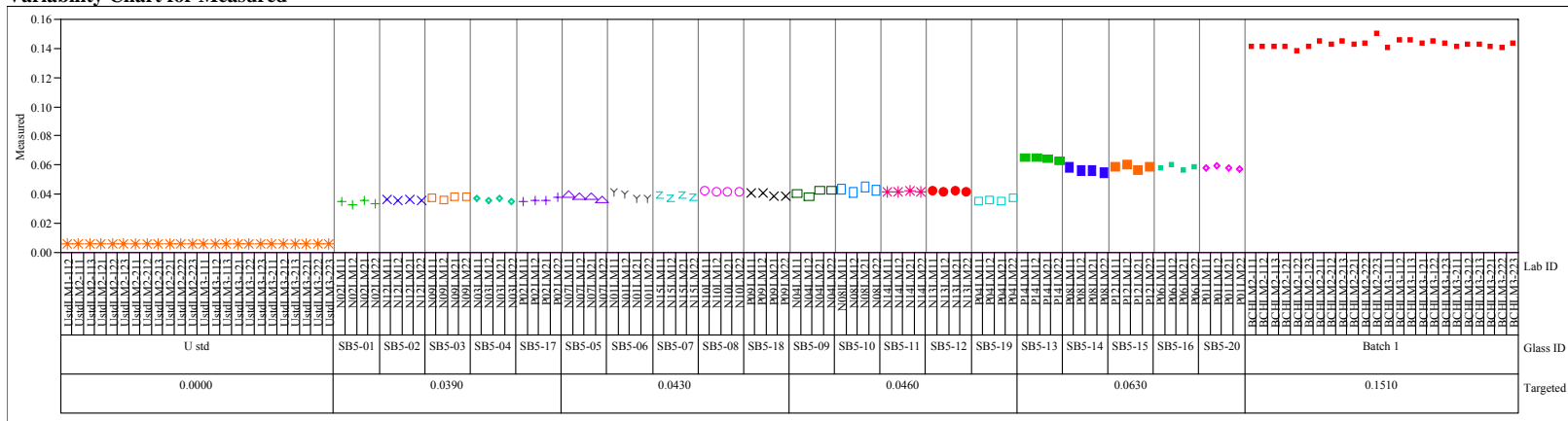


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=BaO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=BaO (wt%)

Variability Chart for Measured bc

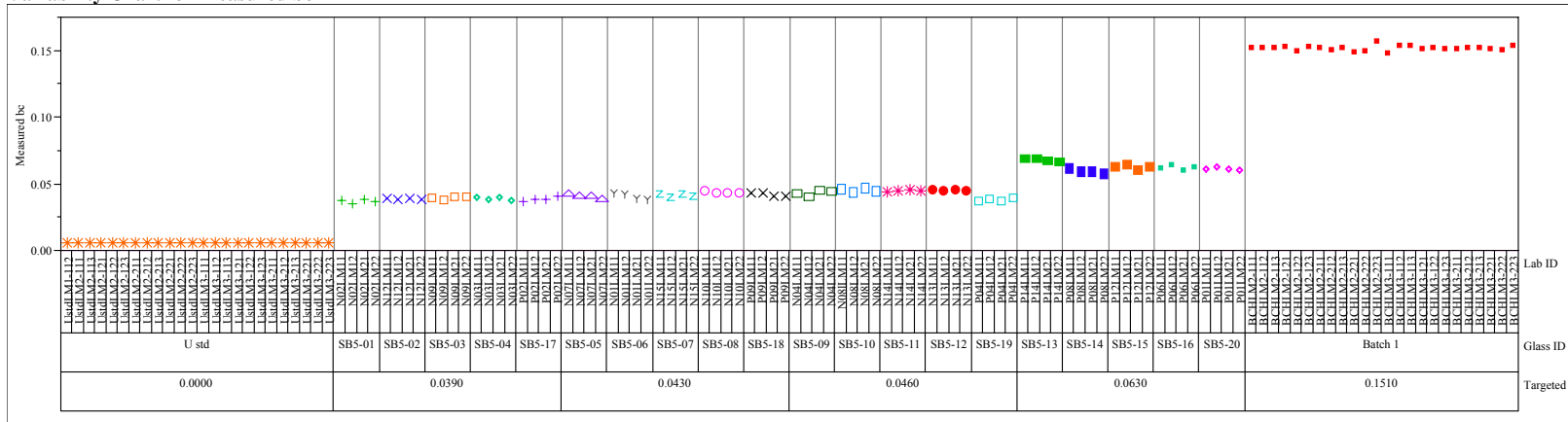
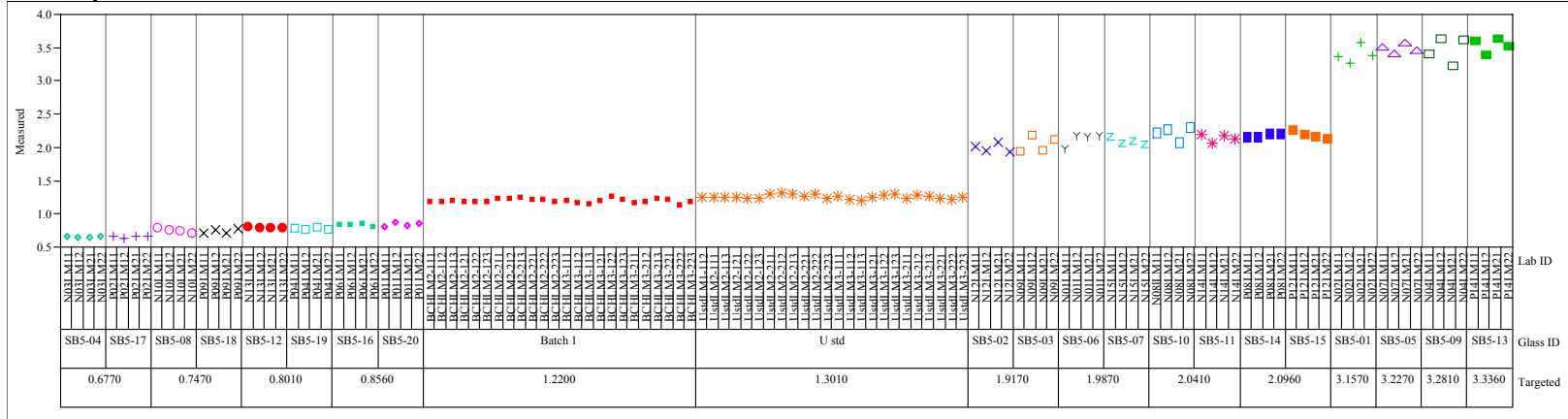


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CaO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CaO (wt%)

Variability Chart for Measured bc

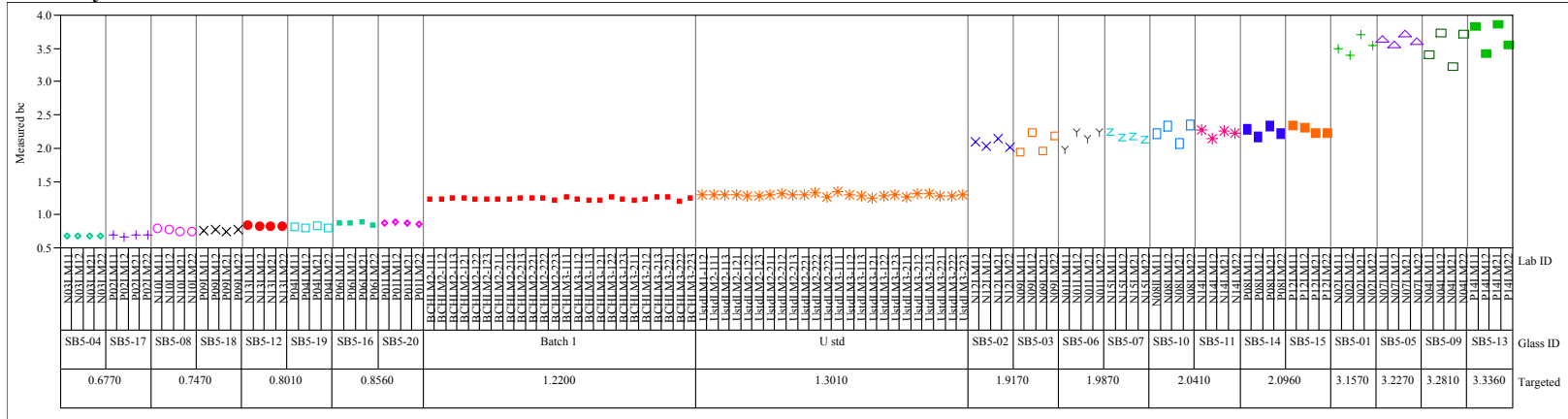
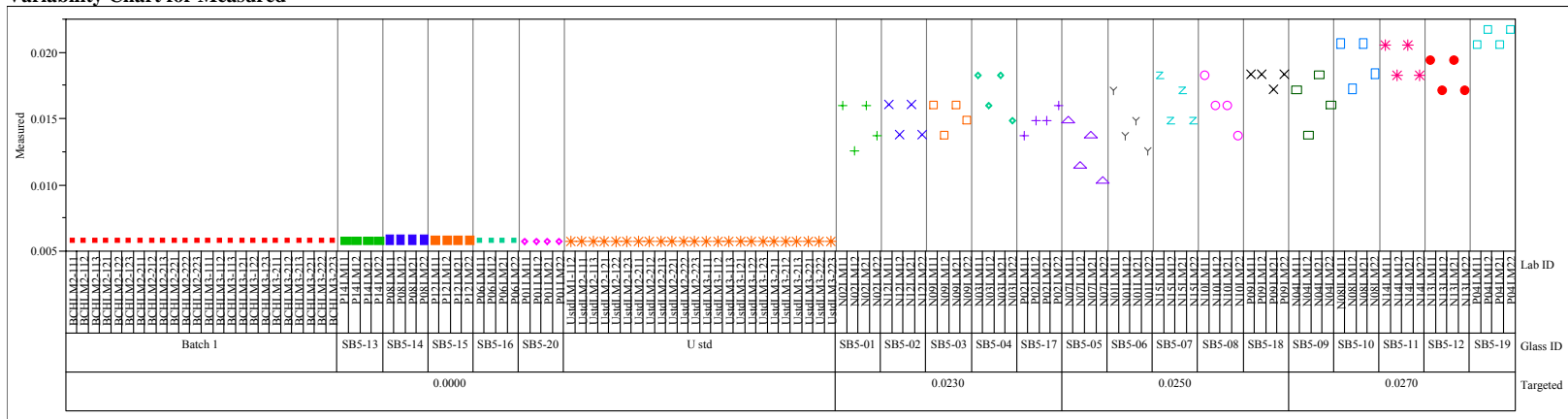


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CdO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CdO (wt%)

Variability Chart for Measured bc

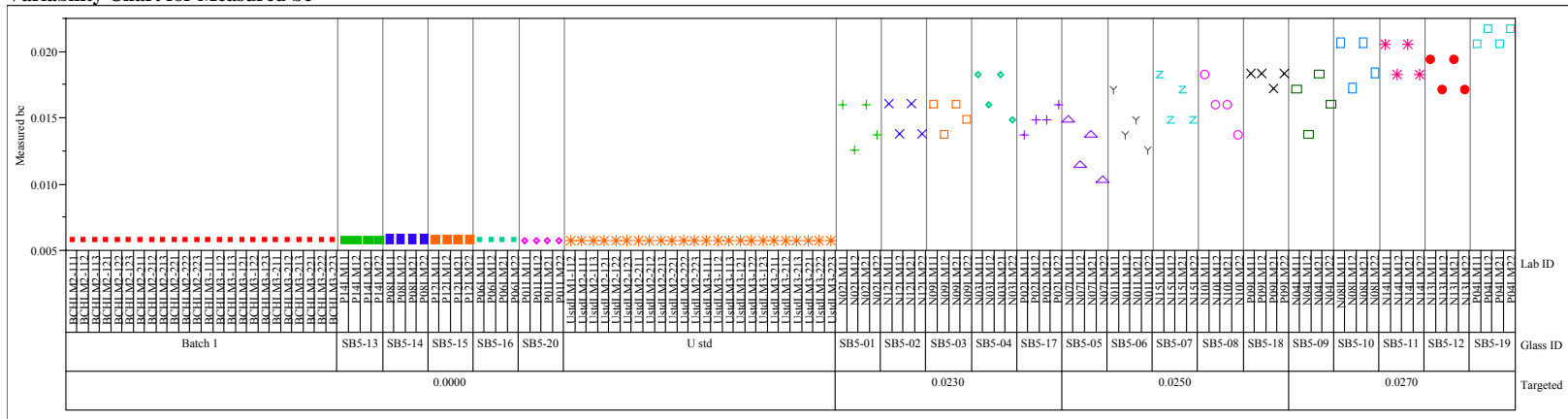
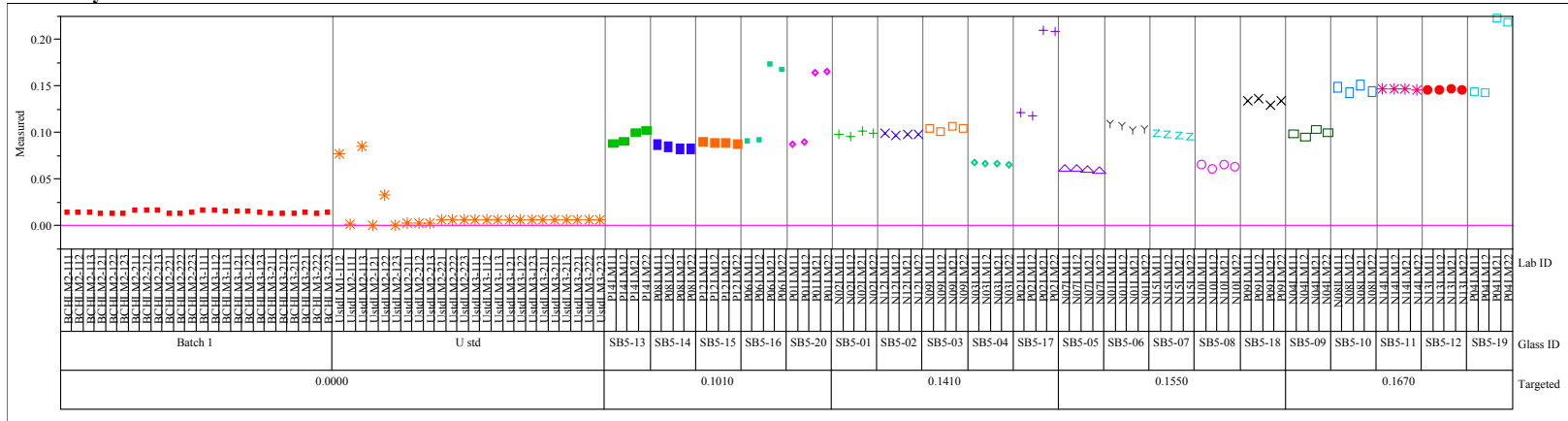


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Ce2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Ce2O3 (wt%)

Variability Chart for Measured bc

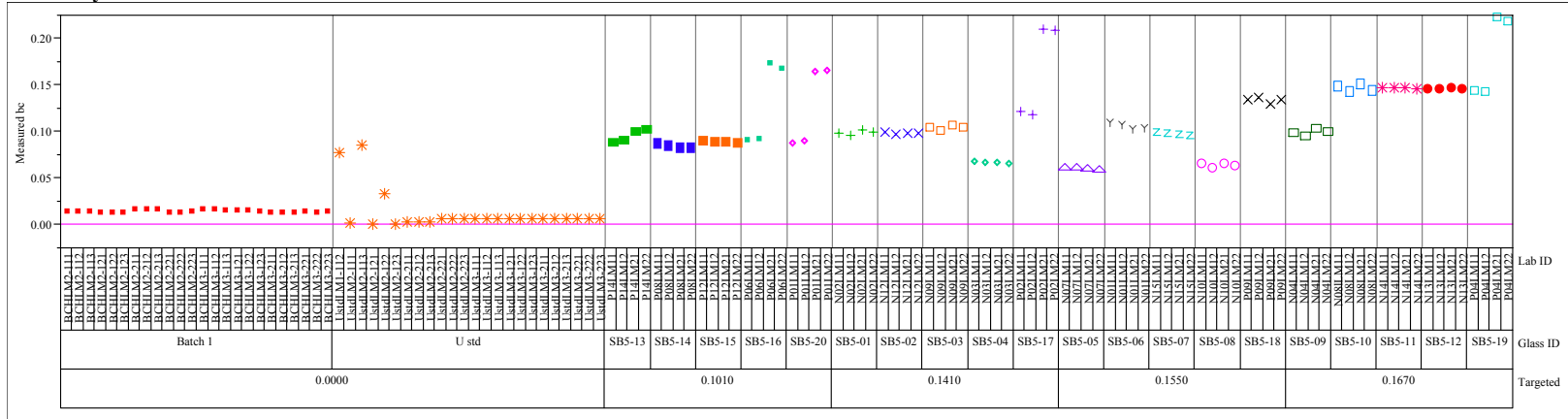
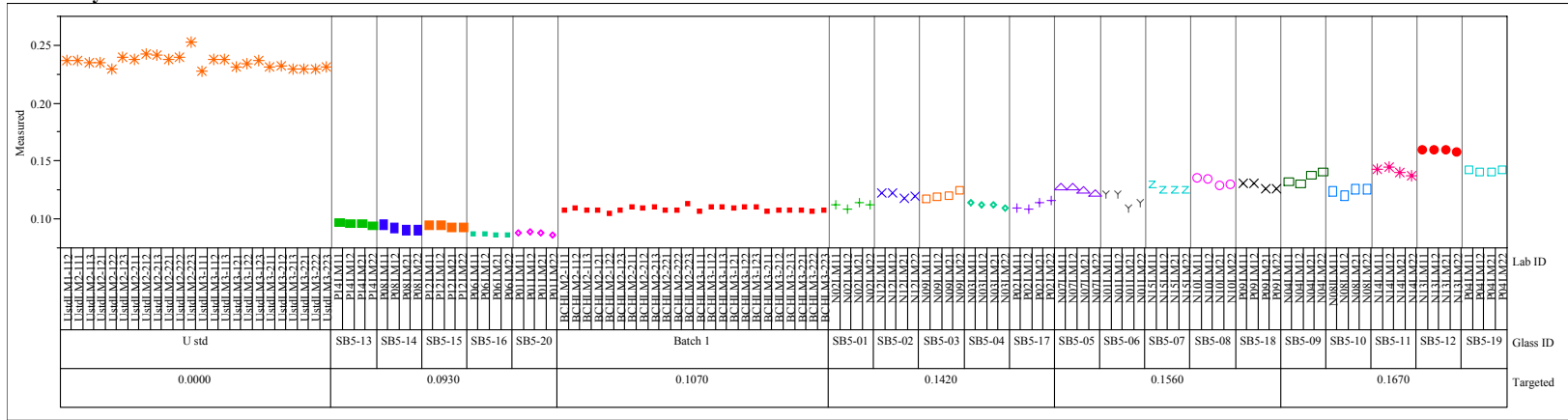


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Cr2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Cr2O3 (wt%)

Variability Chart for Measured bc

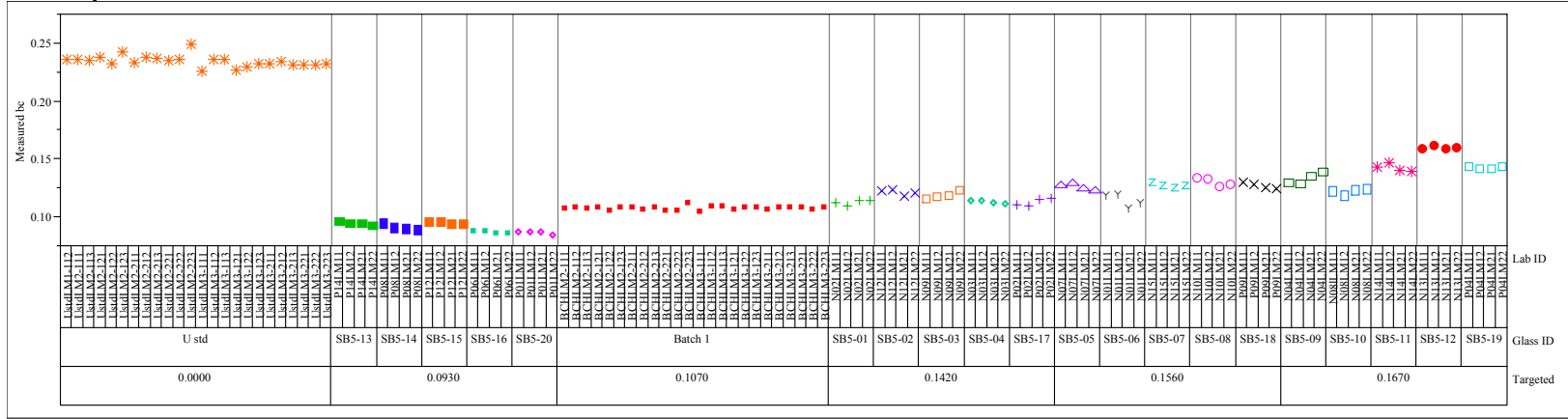
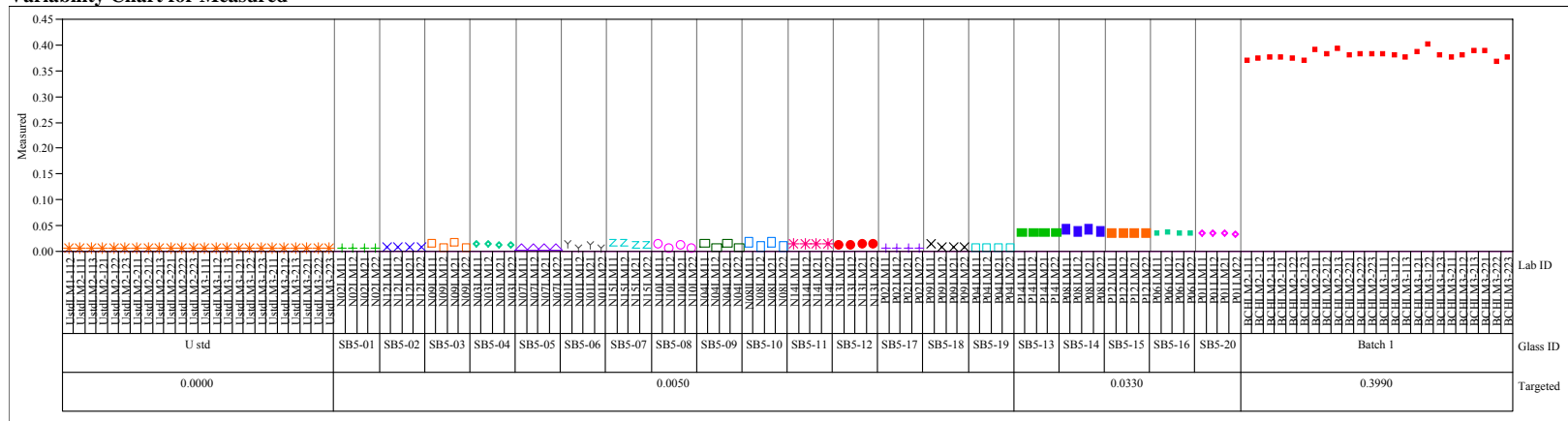


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CuO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=CuO (wt%)

Variability Chart for Measured bc

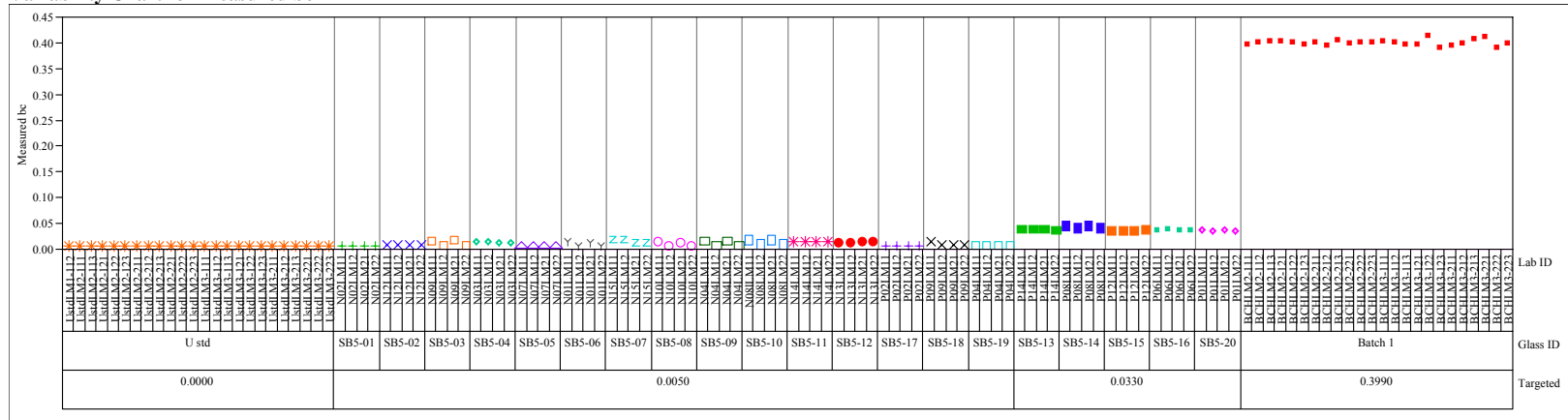
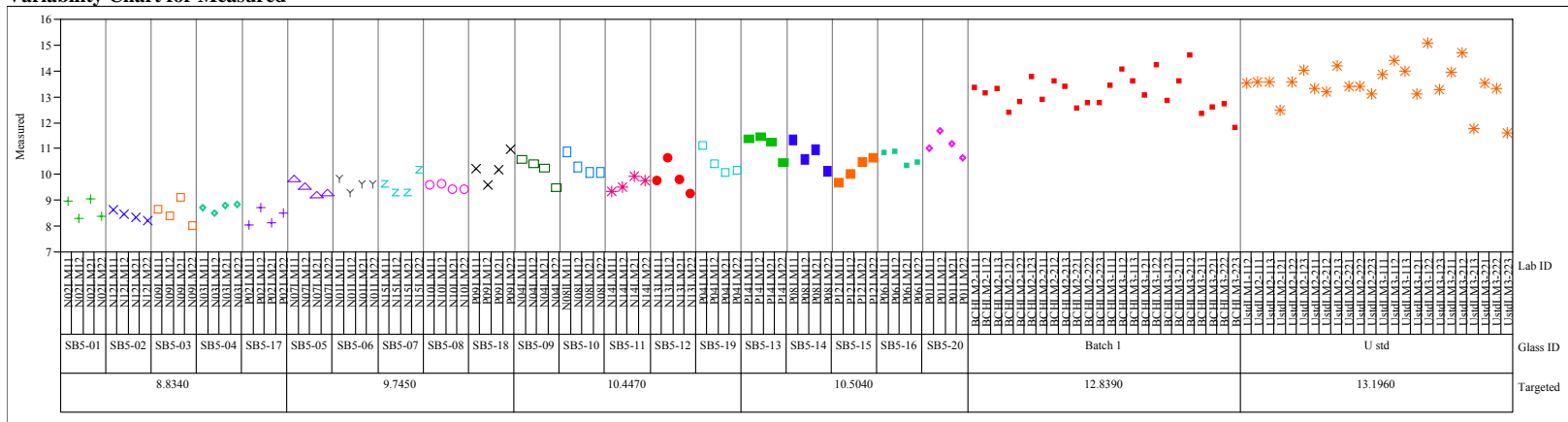


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Fe2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Fe2O3 (wt%)

Variability Chart for Measured bc

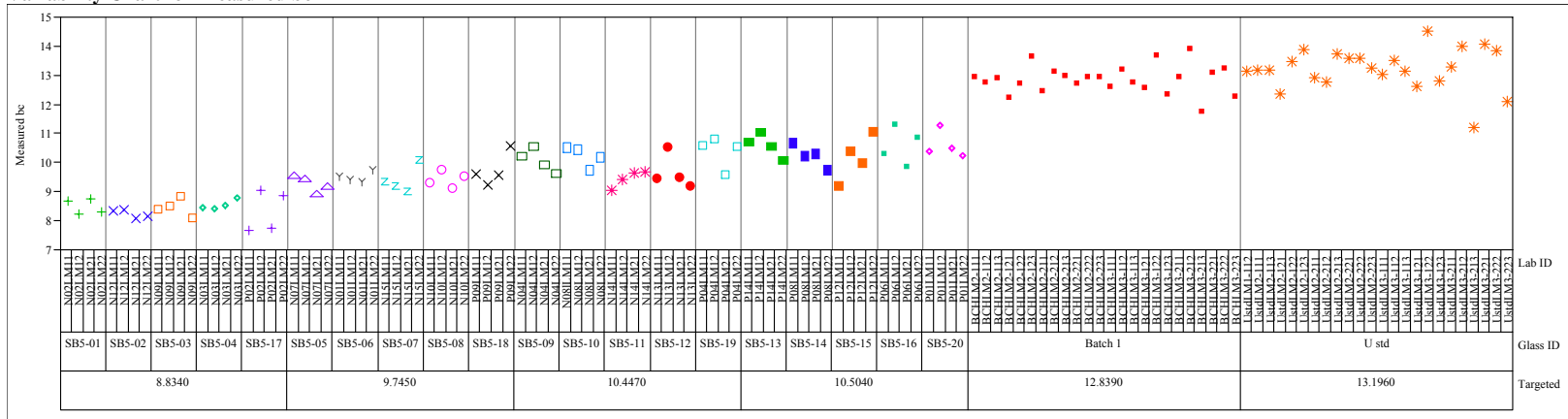
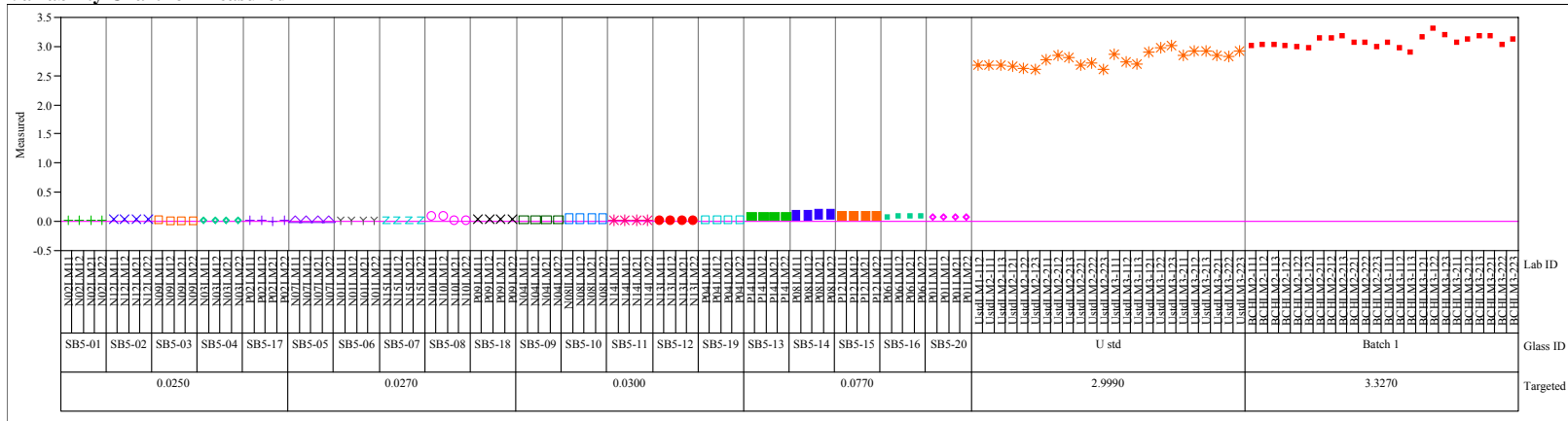


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=K2O (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=K2O (wt%)

Variability Chart for Measured bc

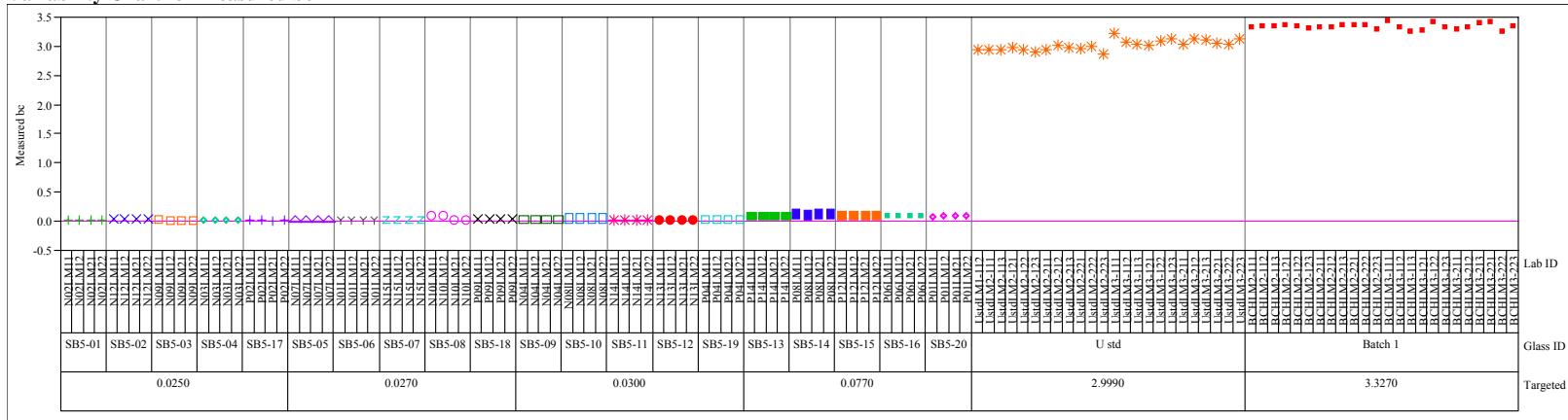
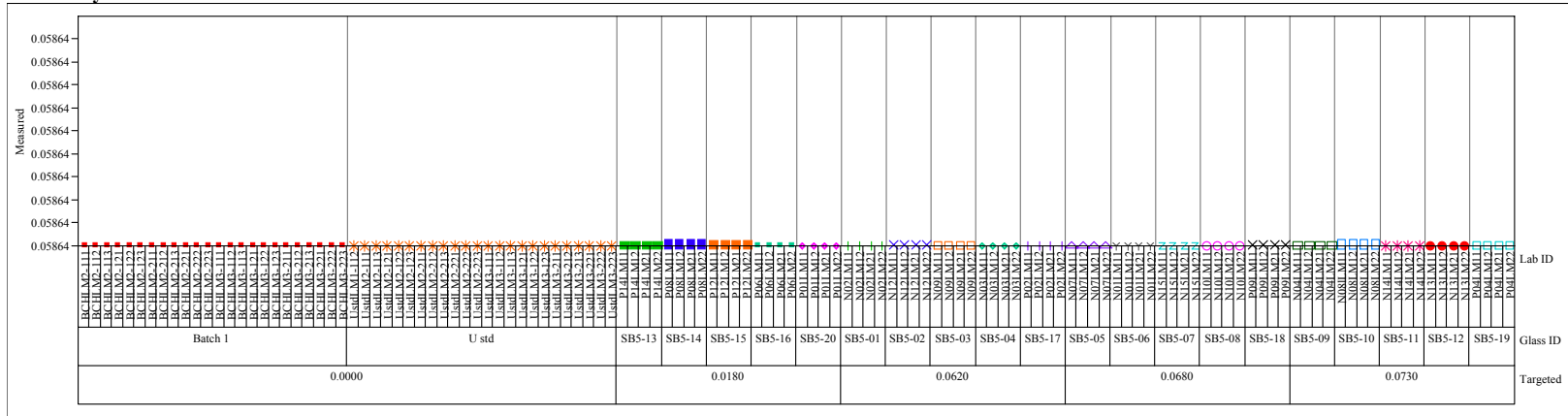


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=La2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=La2O3 (wt%)

Variability Chart for Measured bc

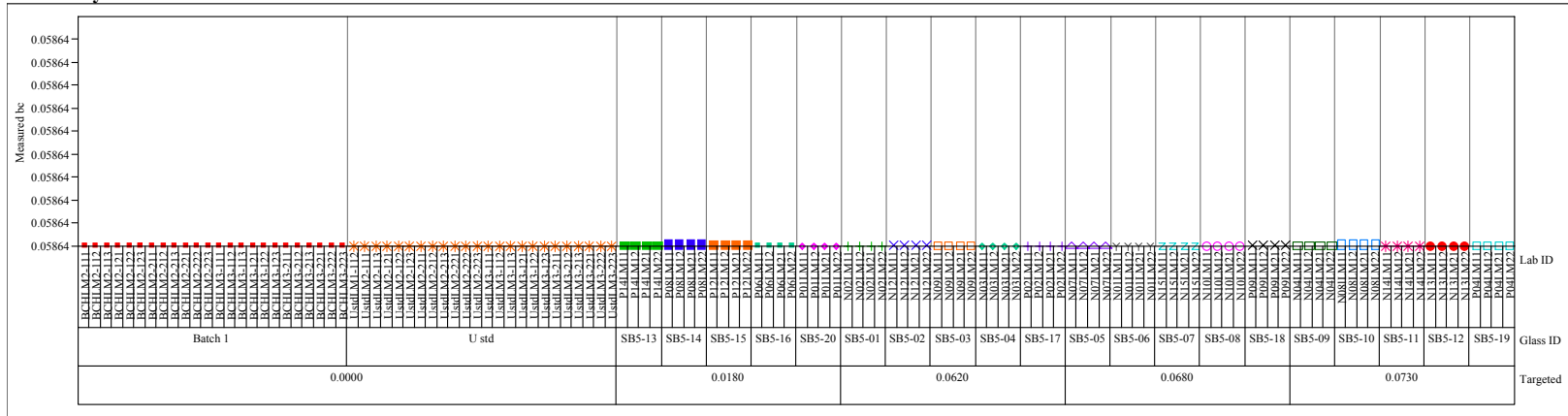
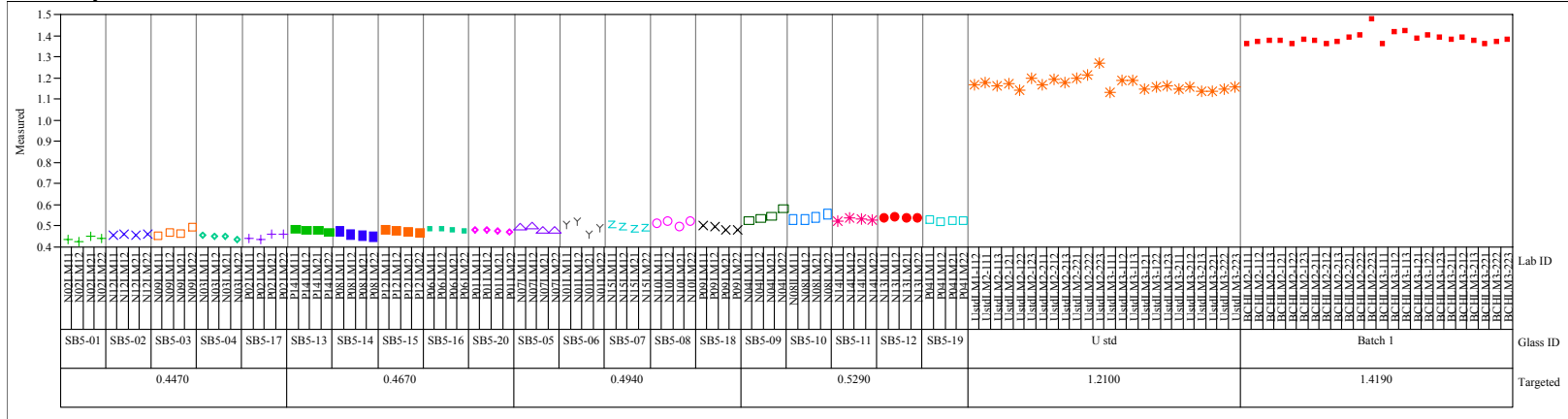


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=MgO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=MgO (wt%)

Variability Chart for Measured bc

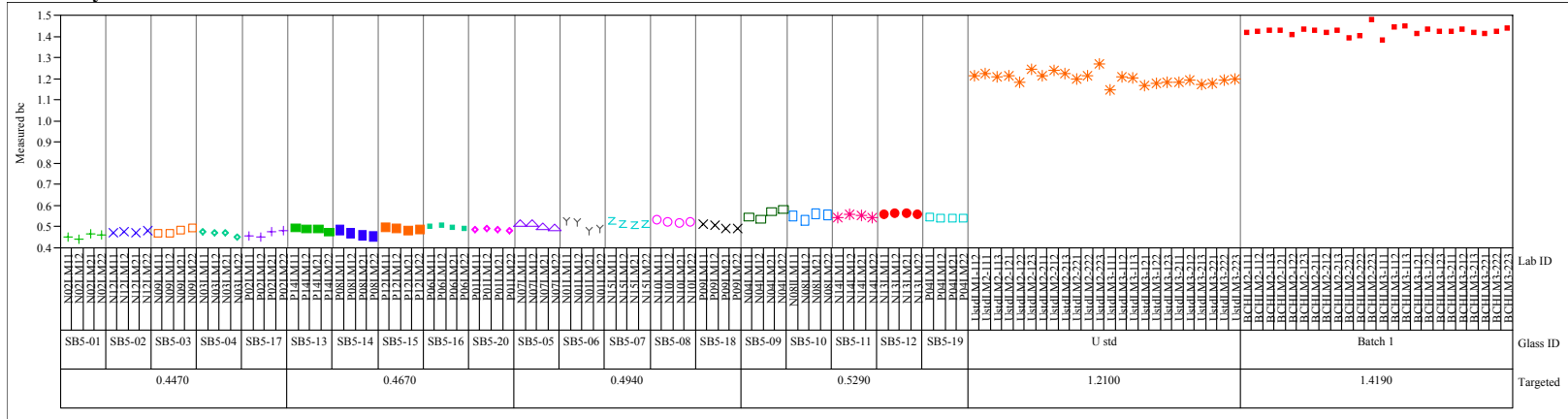
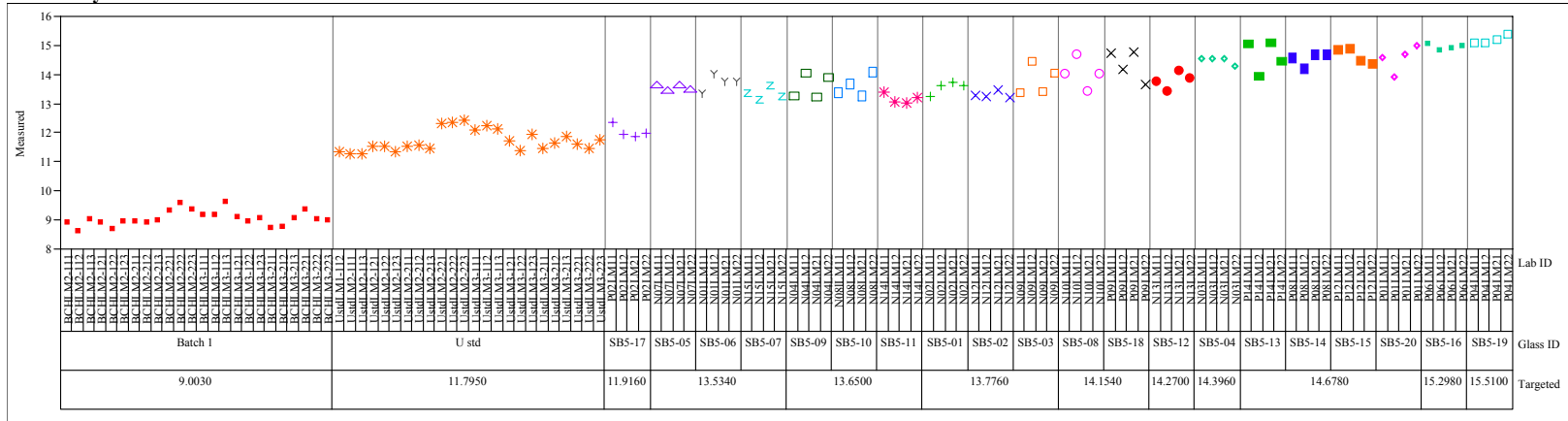


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Na2O (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Na2O (wt%)

Variability Chart for Measured bc

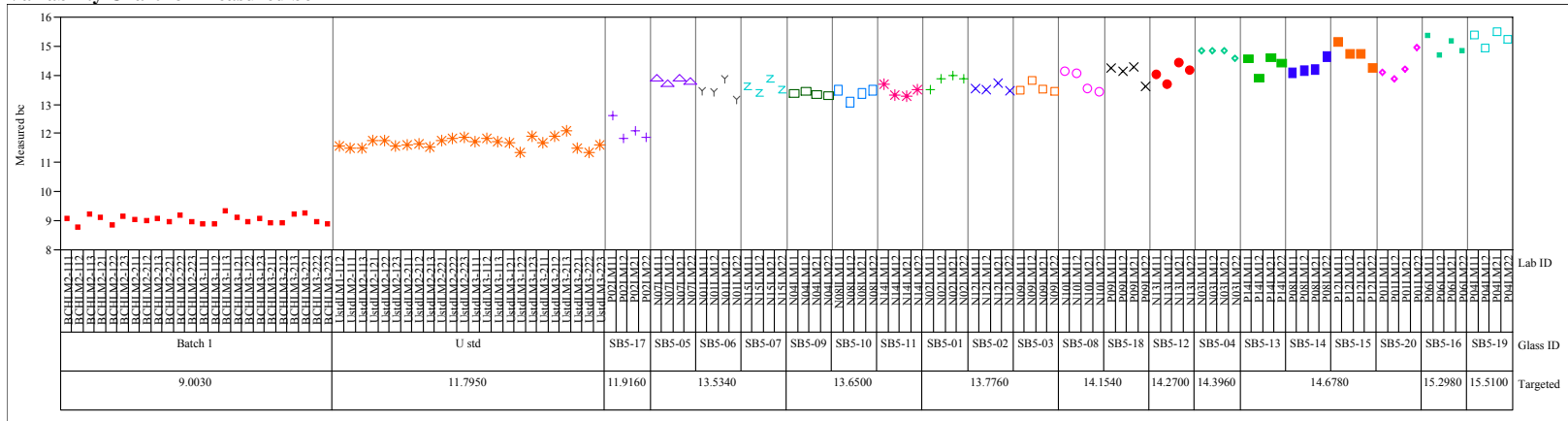
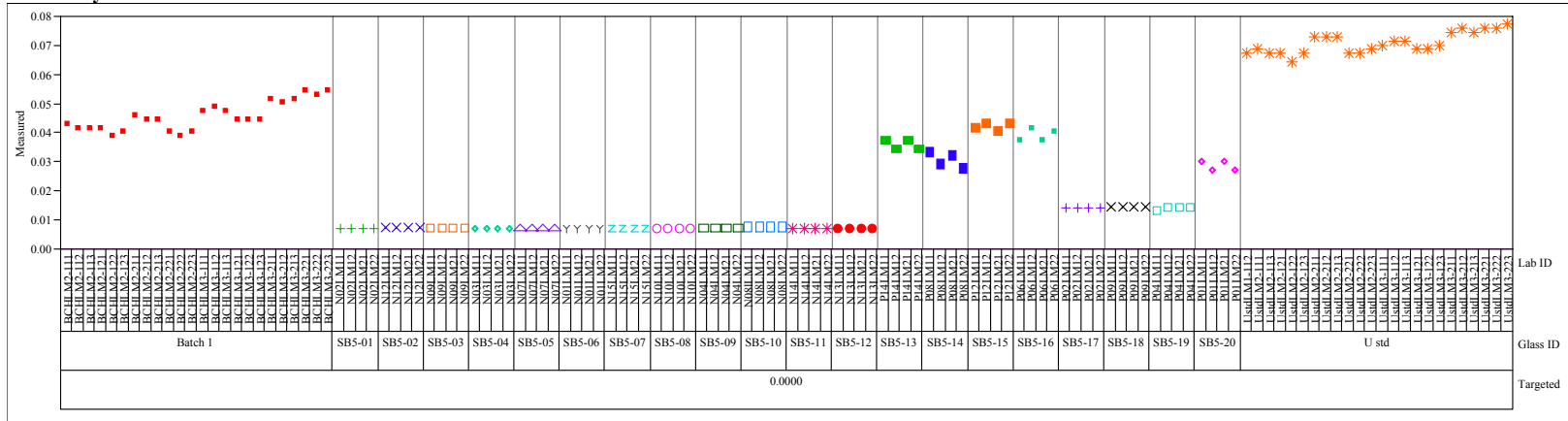


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Nb2O5 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=Nb2O5 (wt%)

Variability Chart for Measured bc

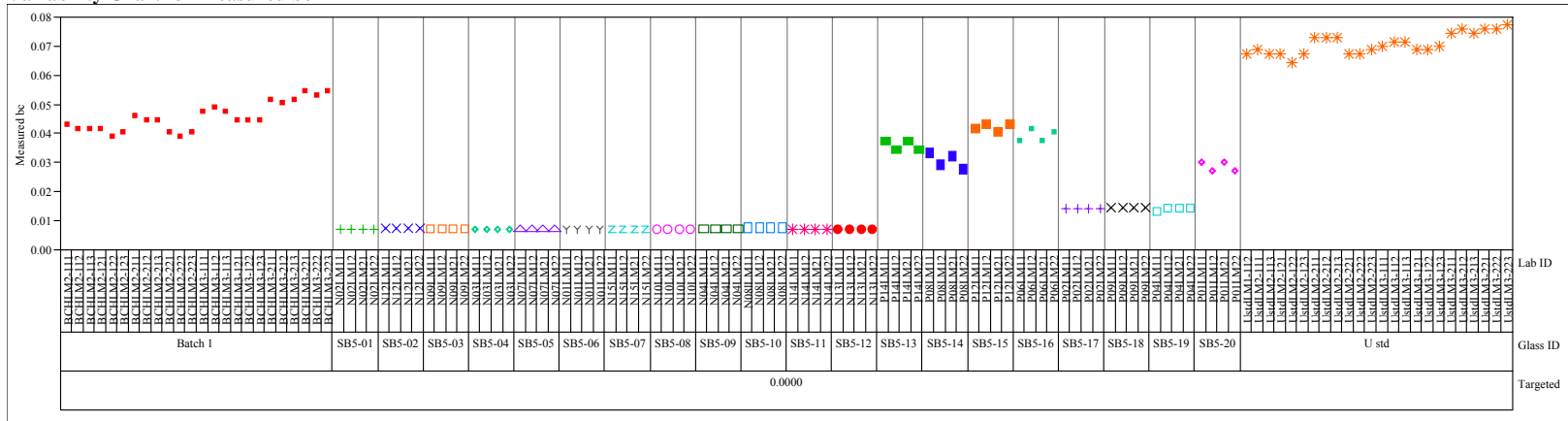
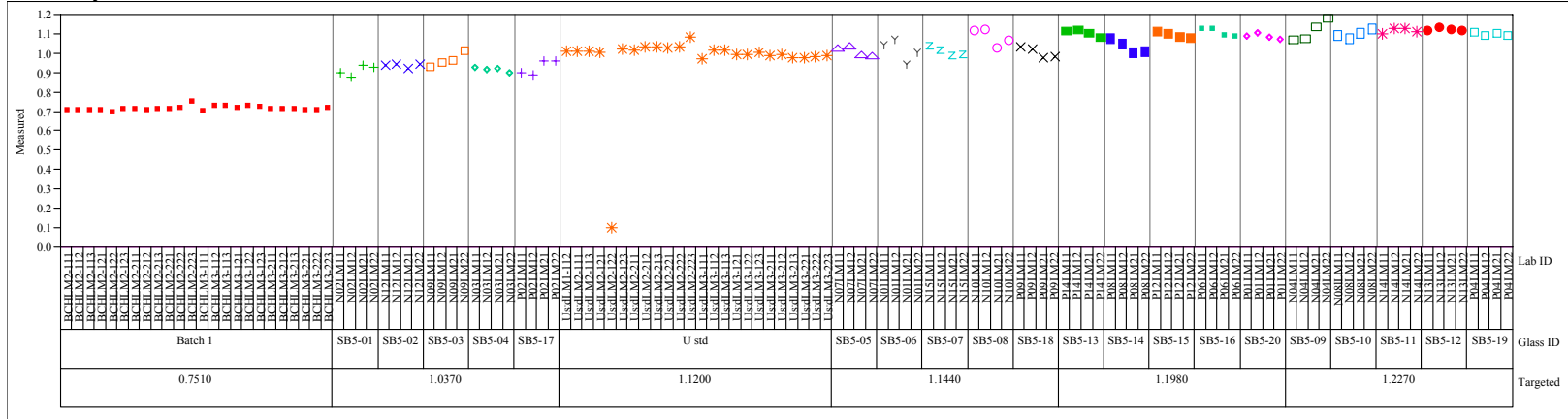


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=NiO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=NiO (wt%)

Variability Chart for Measured bc

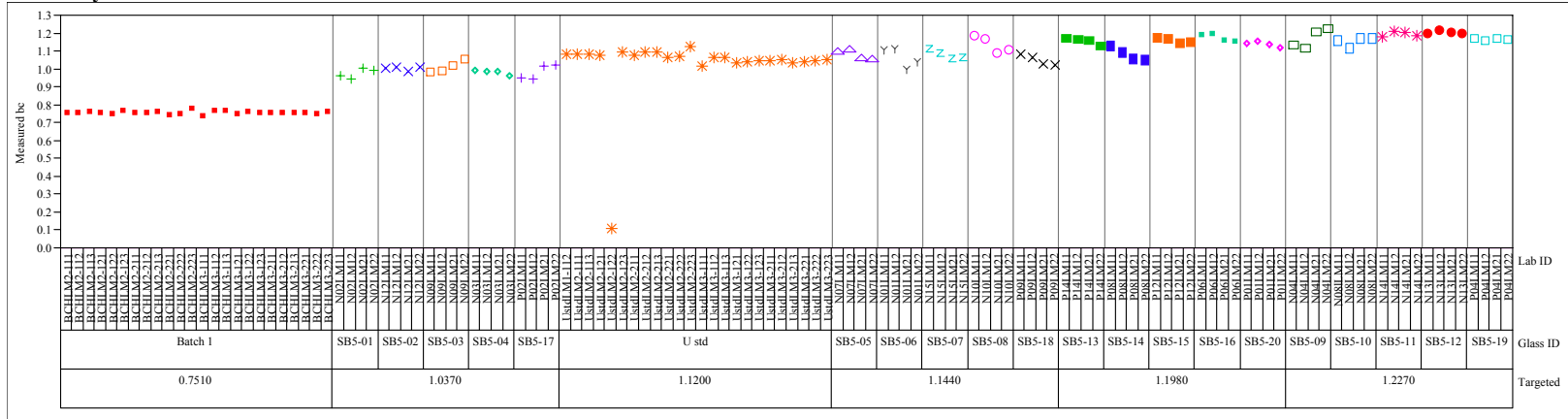
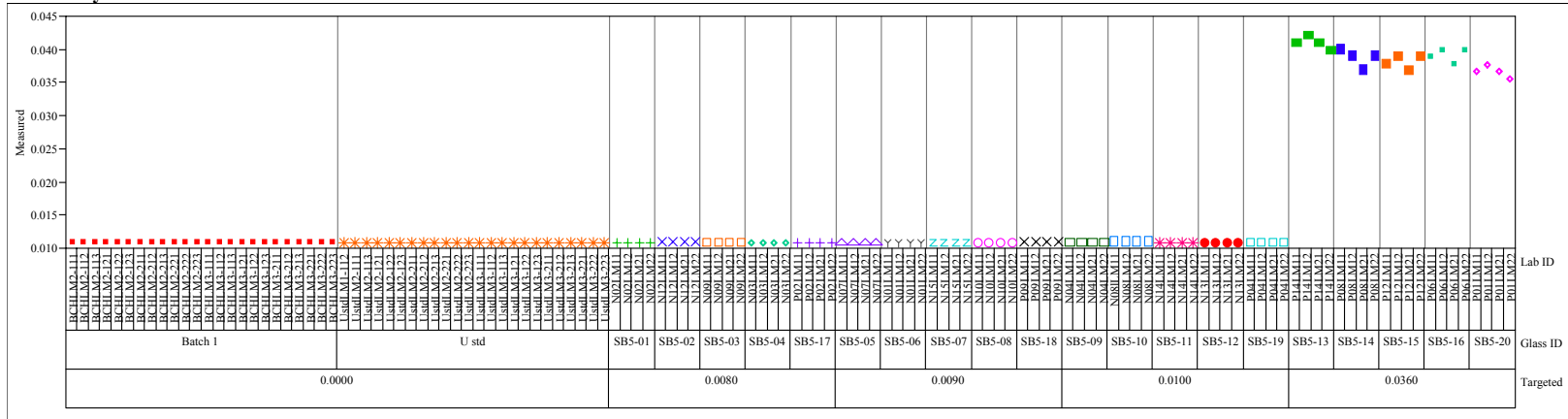


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=PbO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=PbO (wt%)

Variability Chart for Measured bc

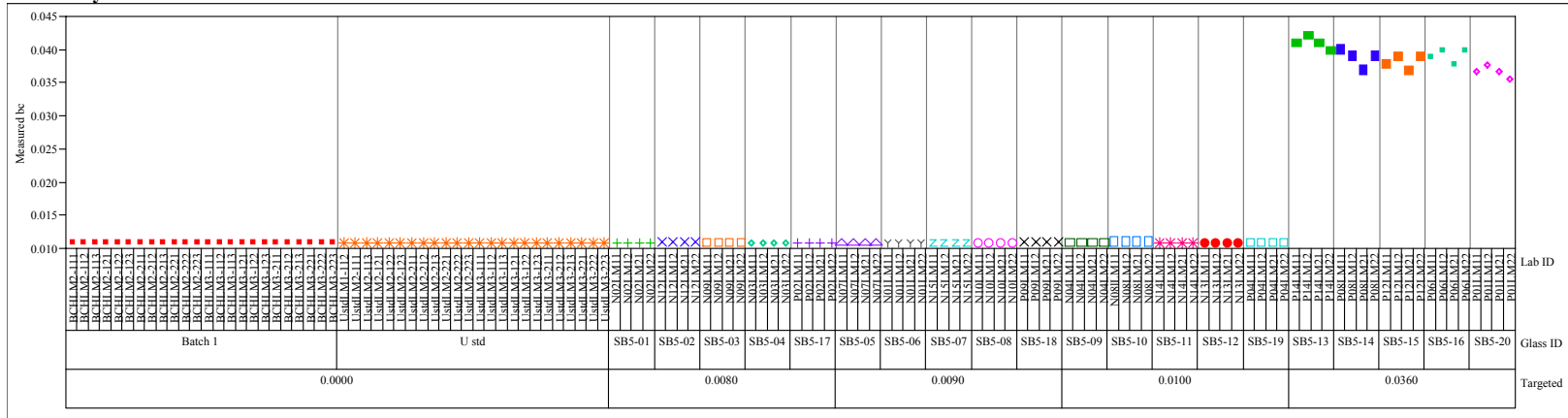
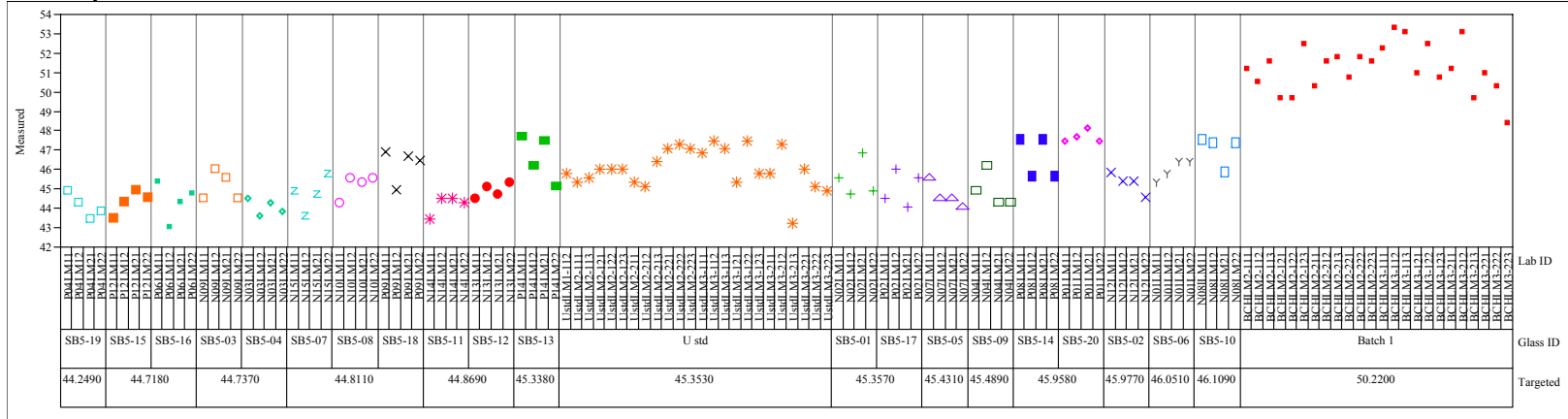


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=SiO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=SiO2 (wt%)

Variability Chart for Measured bc

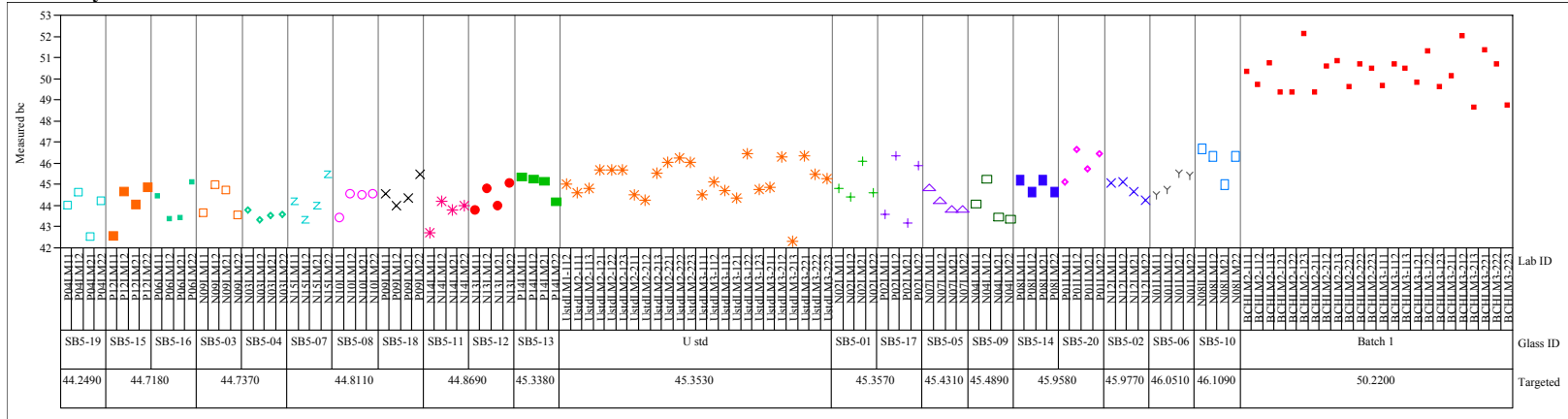
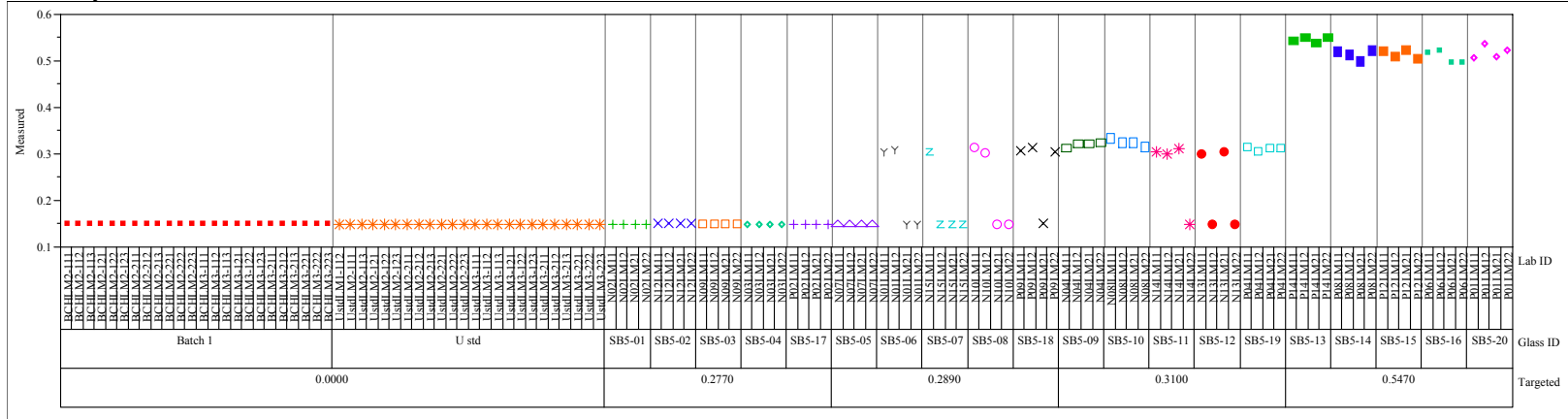


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=SO4 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=SO4 (wt%)

Variability Chart for Measured bc

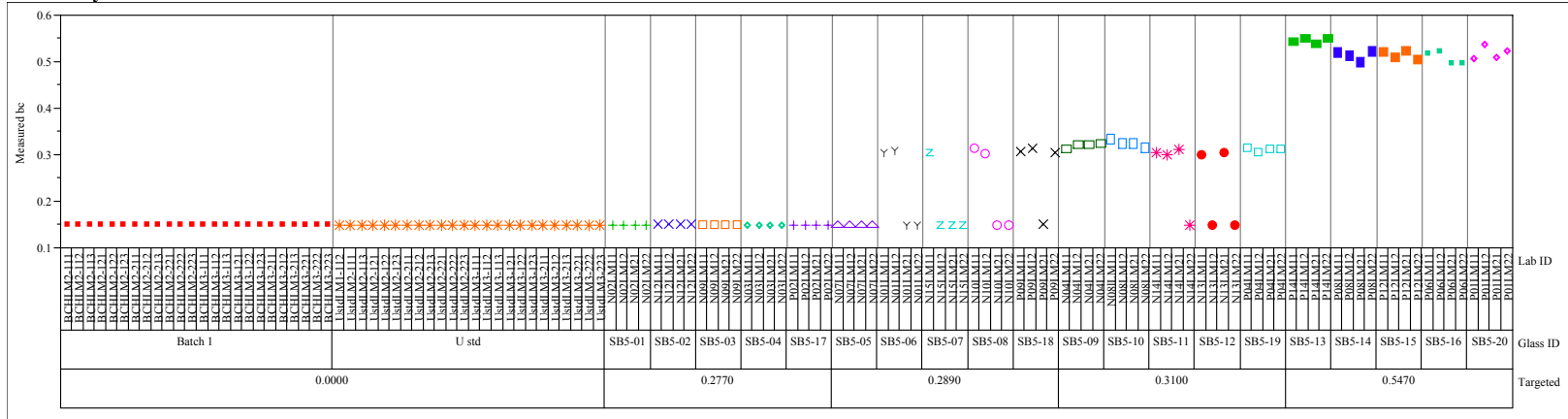
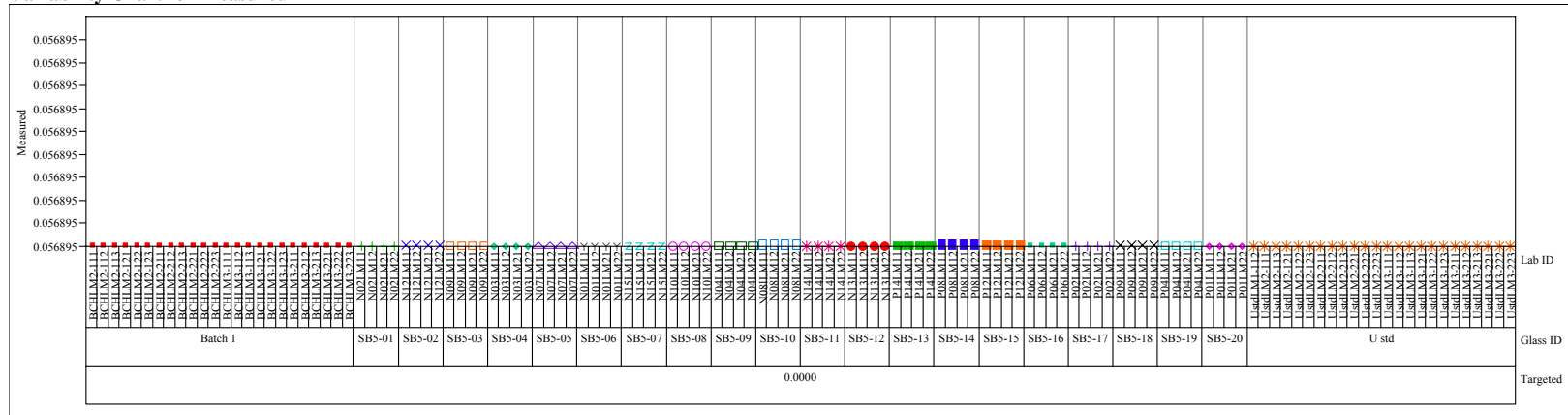


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=ThO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=ThO2 (wt%)

Variability Chart for Measured bc

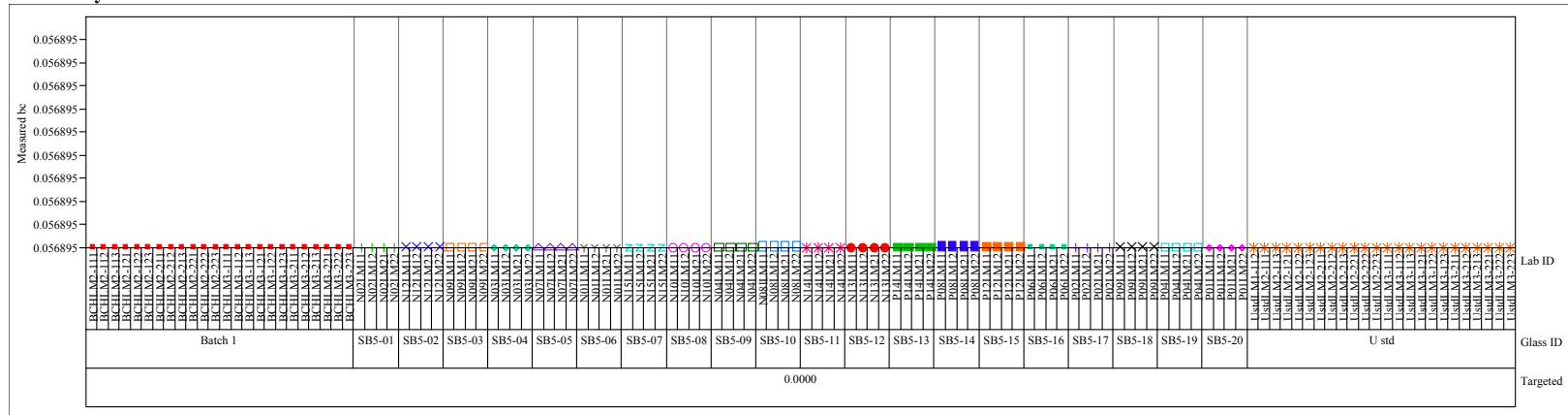
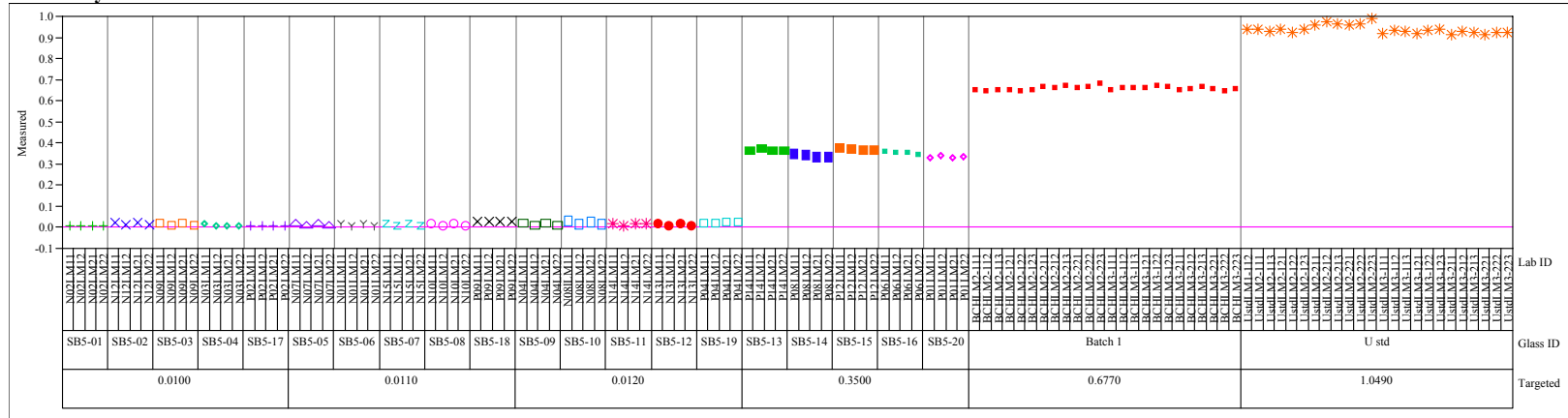


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=TiO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=TiO2 (wt%)

Variability Chart for Measured bc

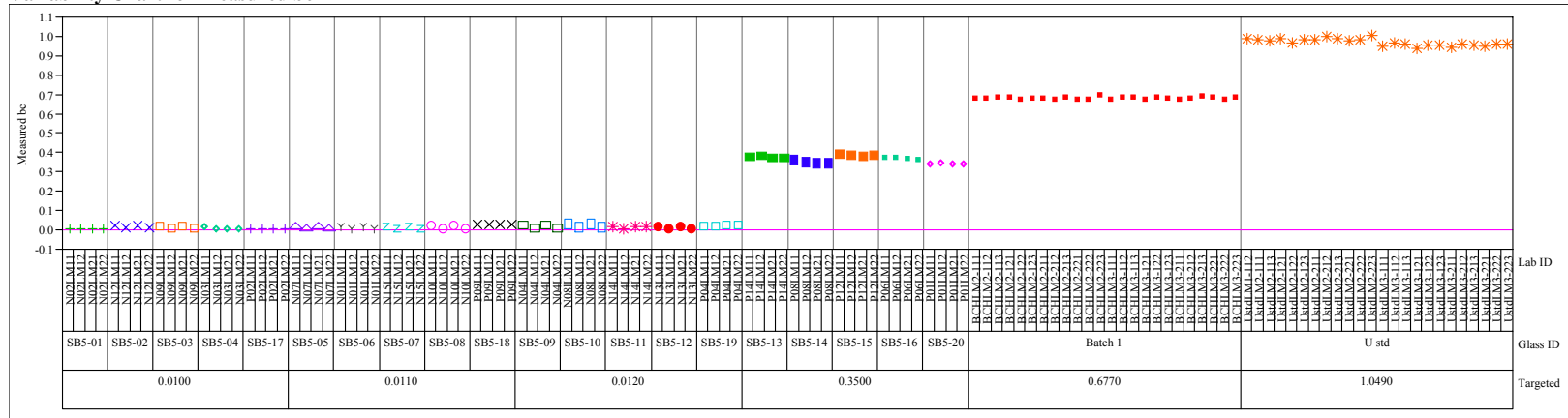
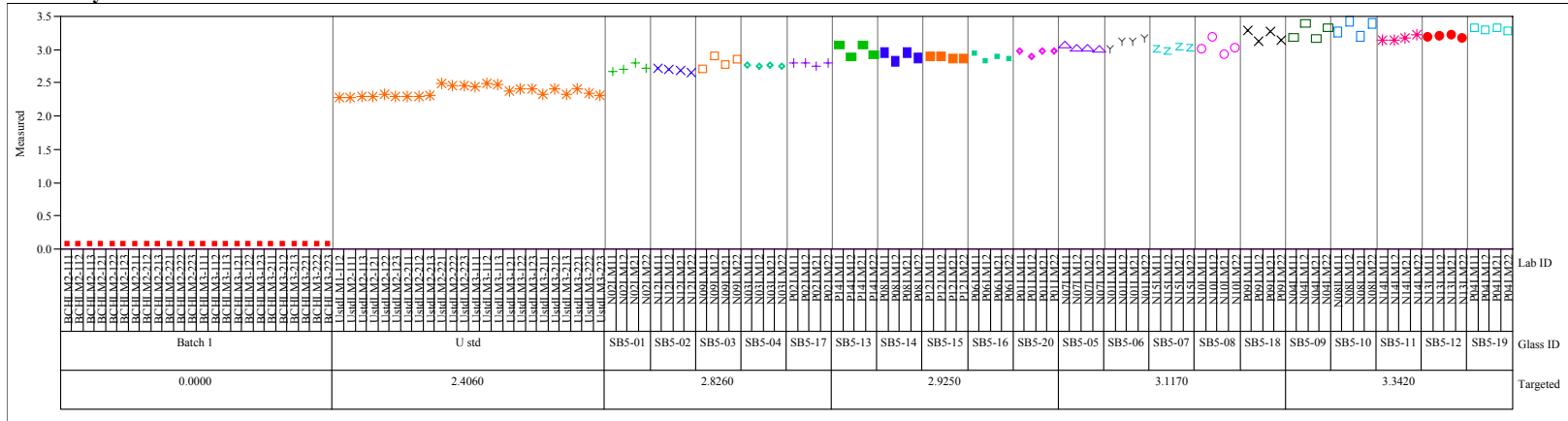


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=U3O8 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=U3O8 (wt%)

Variability Chart for Measured bc

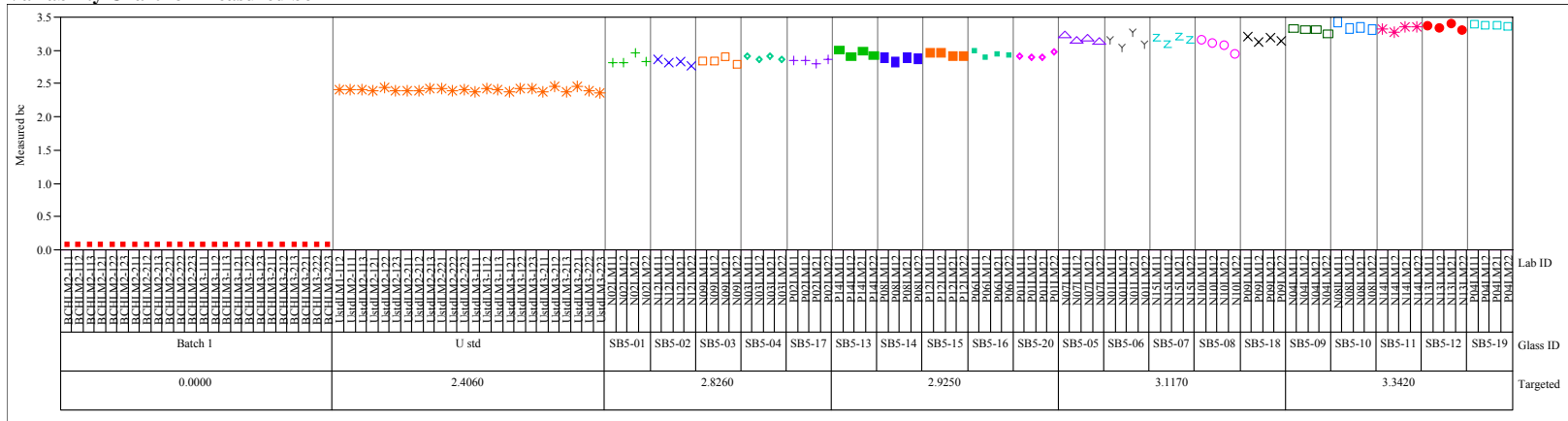
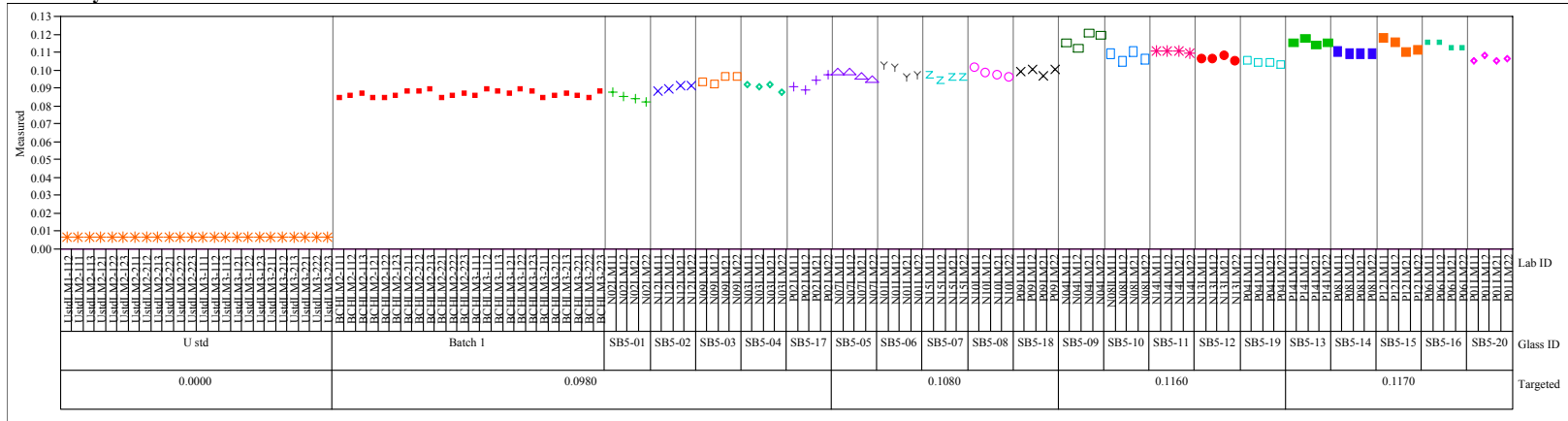


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=ZrO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=LM, Oxide=ZrO2 (wt%)

Variability Chart for Measured bc

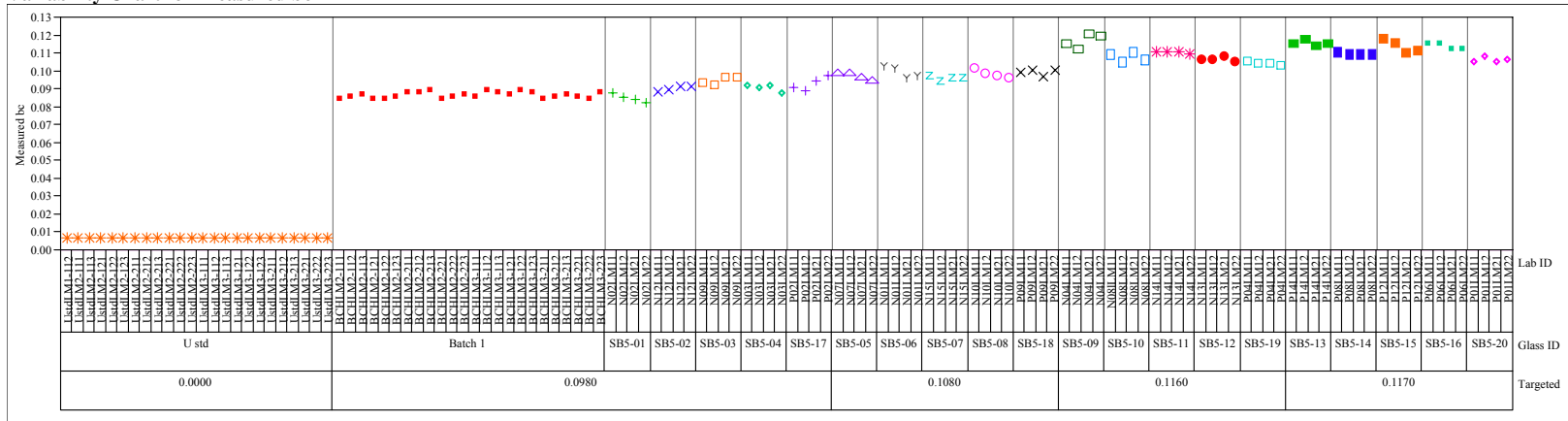
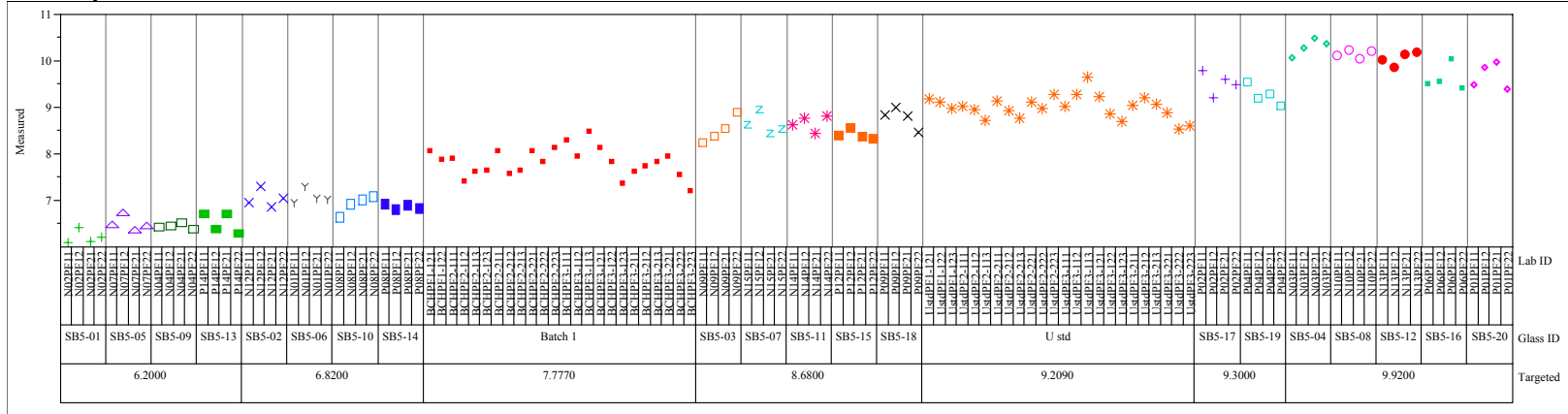


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=PF, Oxide=B2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=PF, Oxide=B2O3 (wt%)

Variability Chart for Measured bc

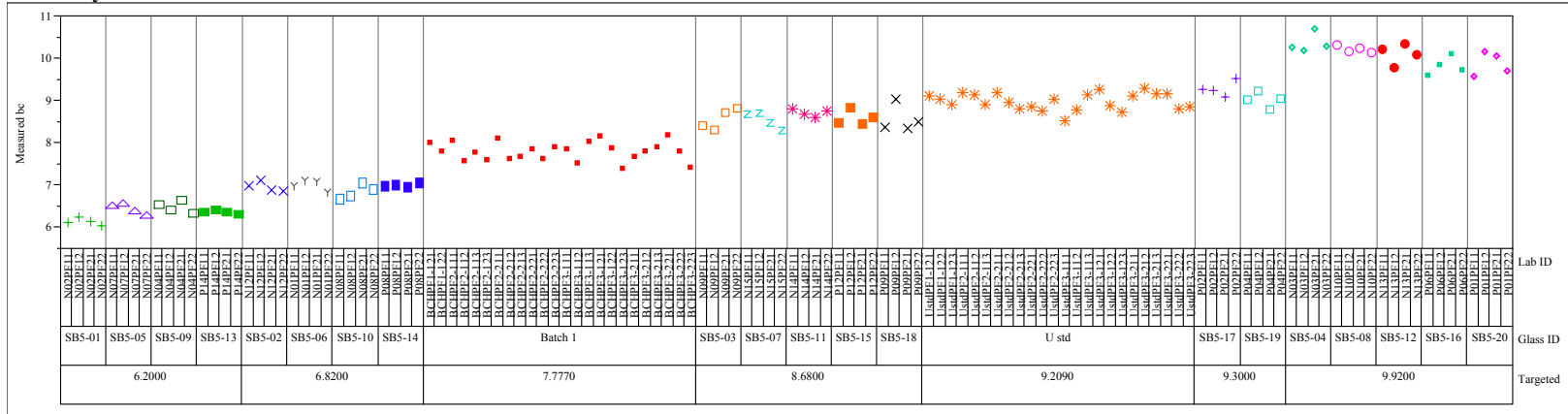
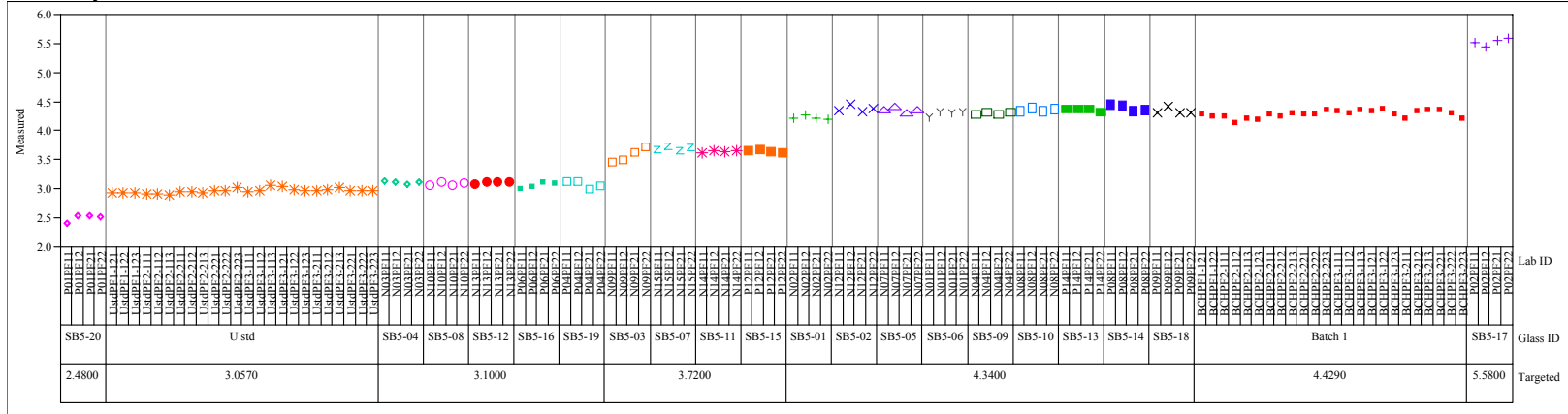


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00003, Prep=PF, Oxide=Li2O (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00003, Prep=PF, Oxide=Li2O (wt%)

Variability Chart for Measured bc

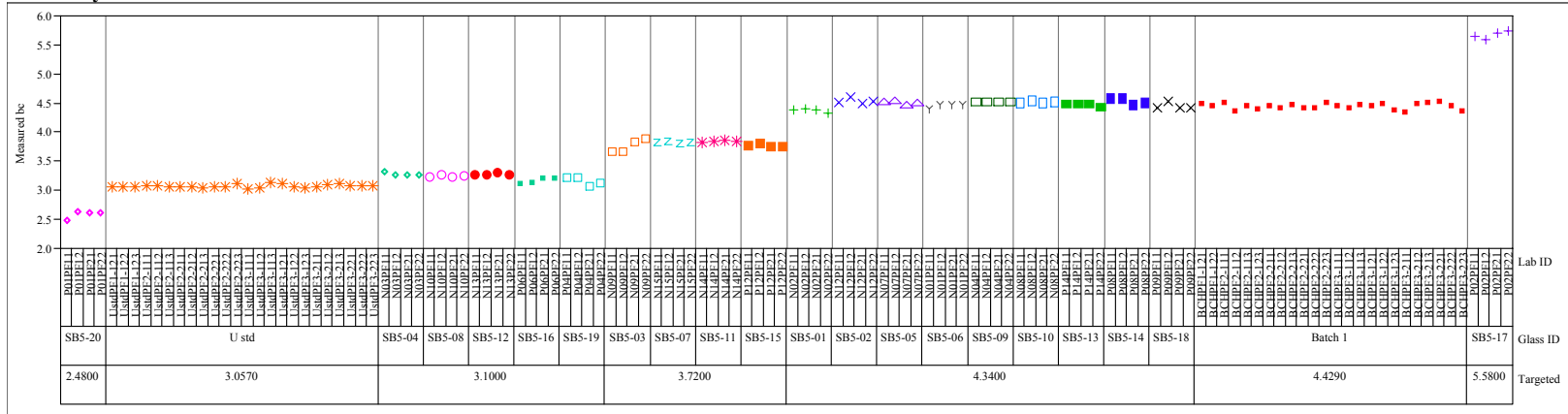
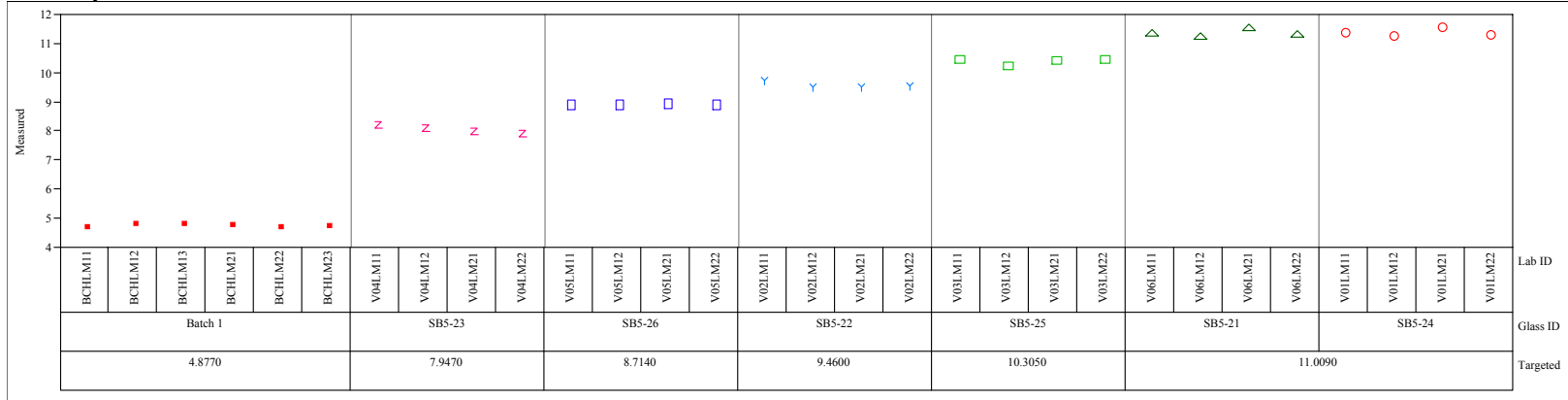


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Al2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Al2O3 (wt%)

Variability Chart for Measured bc

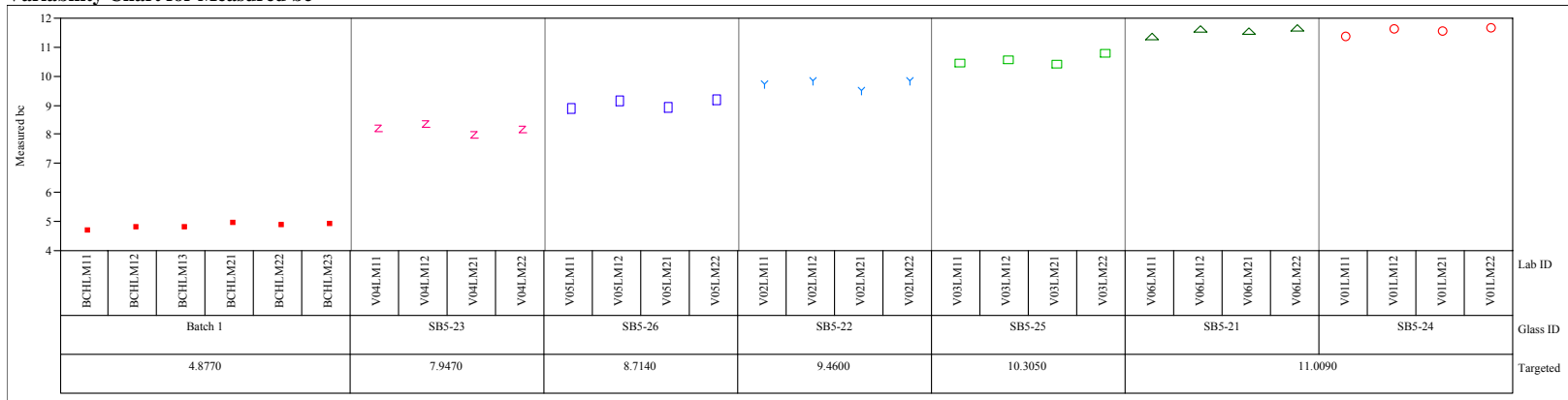
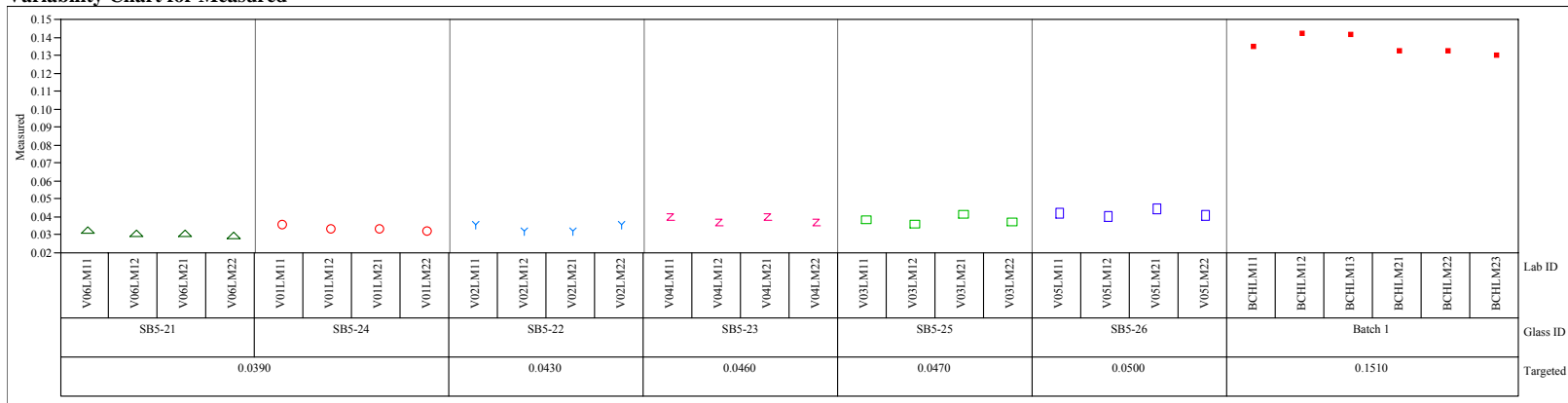


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=BaO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=BaO (wt%)

Variability Chart for Measured bc

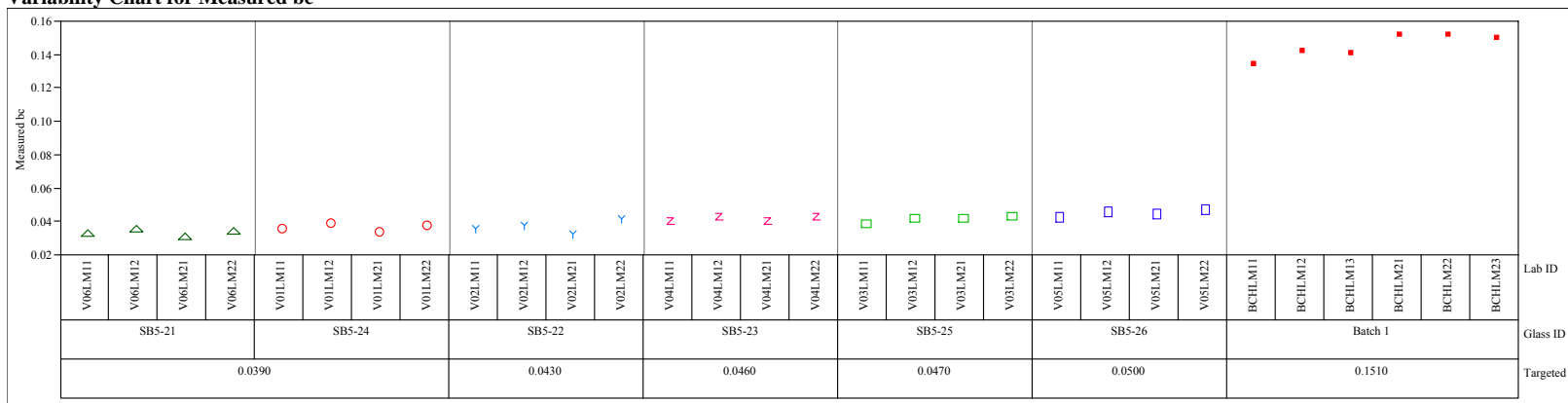
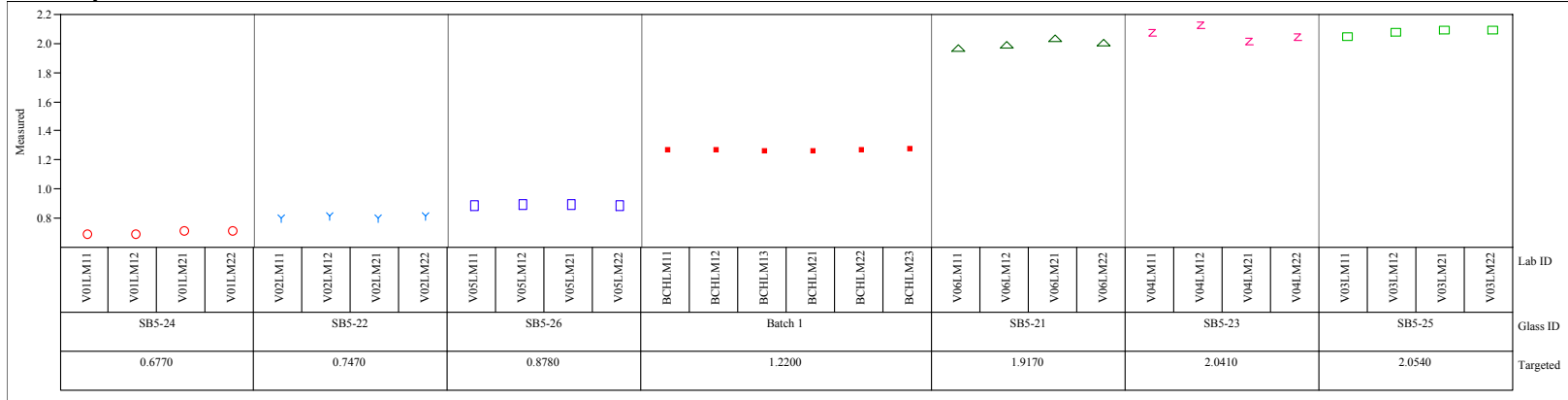


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=CaO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=CaO (wt%)

Variability Chart for Measured bc

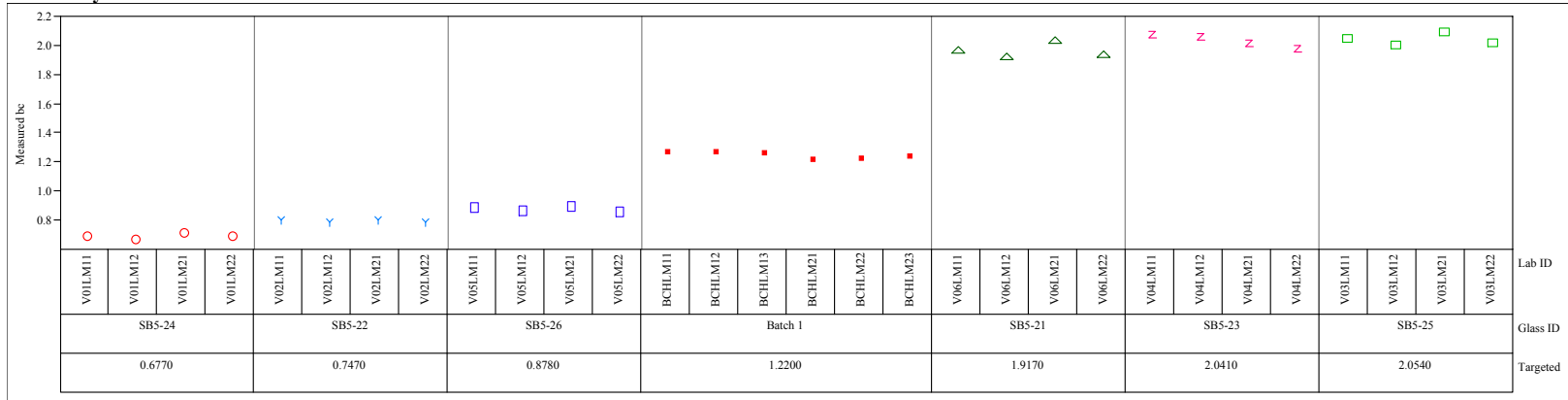
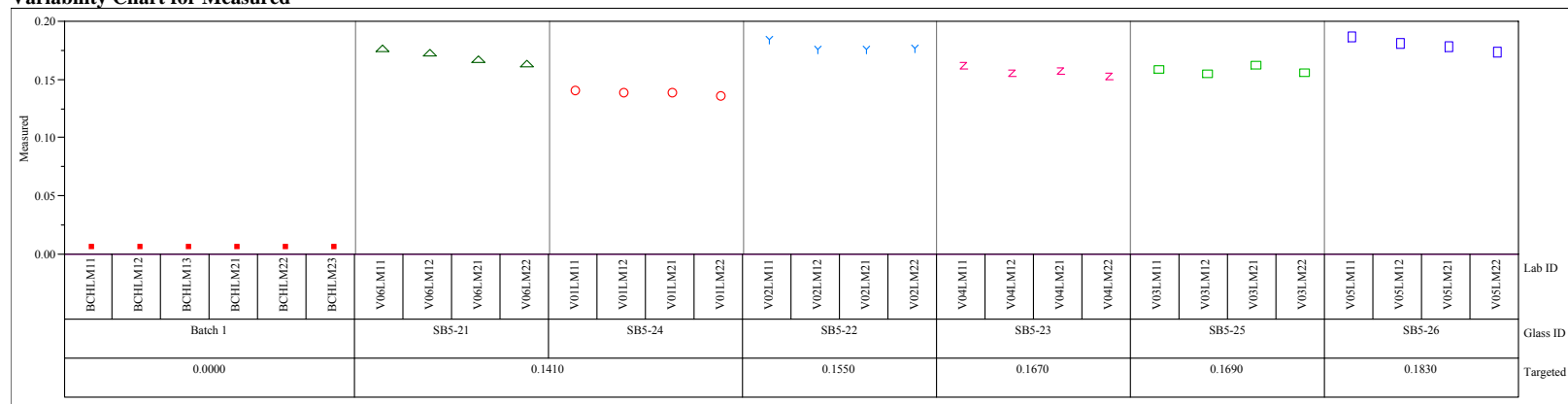


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Ce2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Ce2O3 (wt%)

Variability Chart for Measured bc

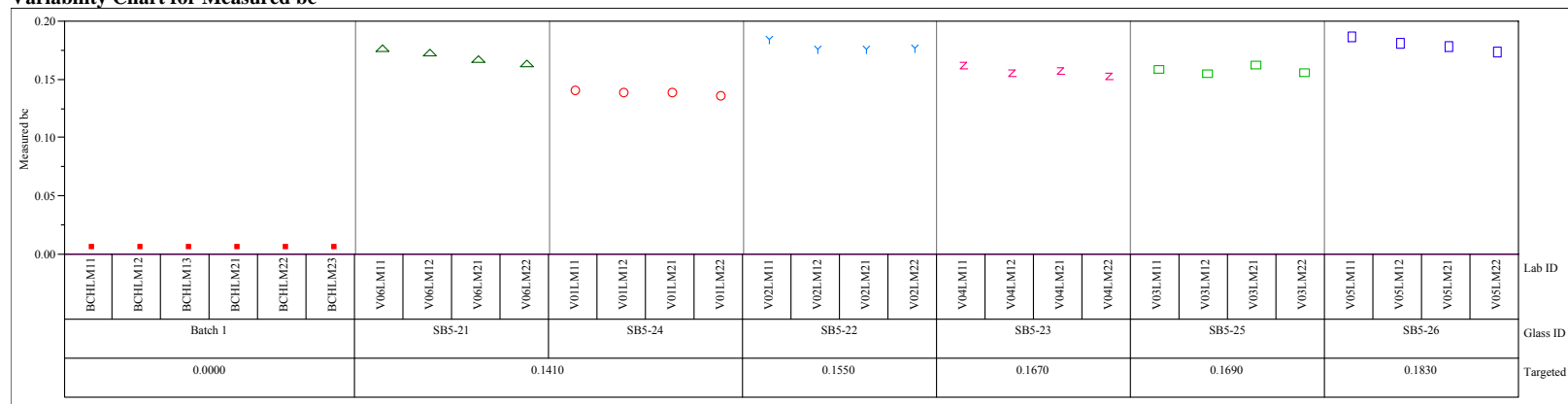
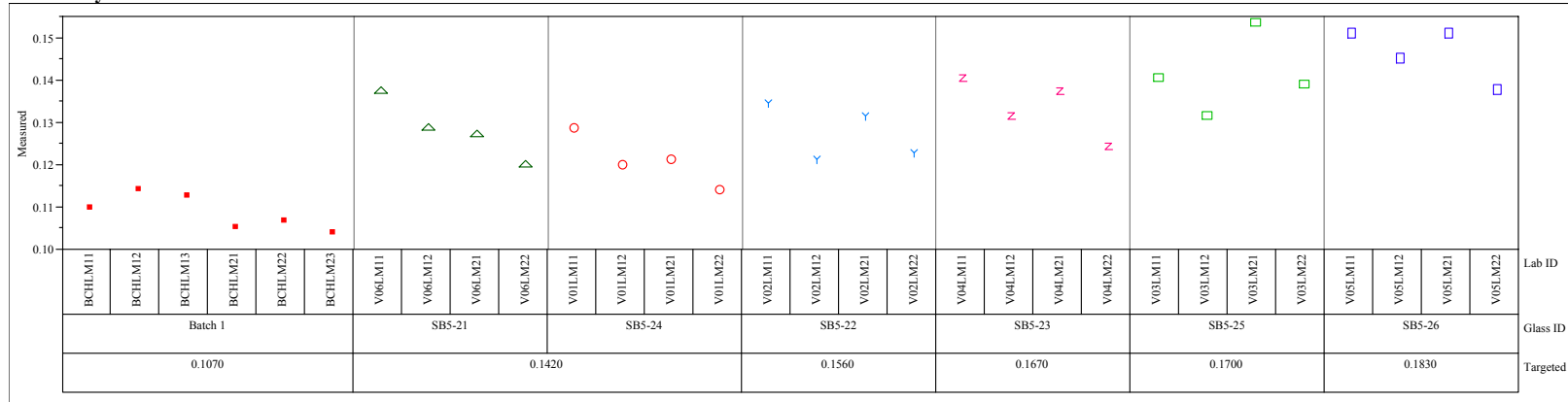


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Cr2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Cr2O3 (wt%)

Variability Chart for Measured bc

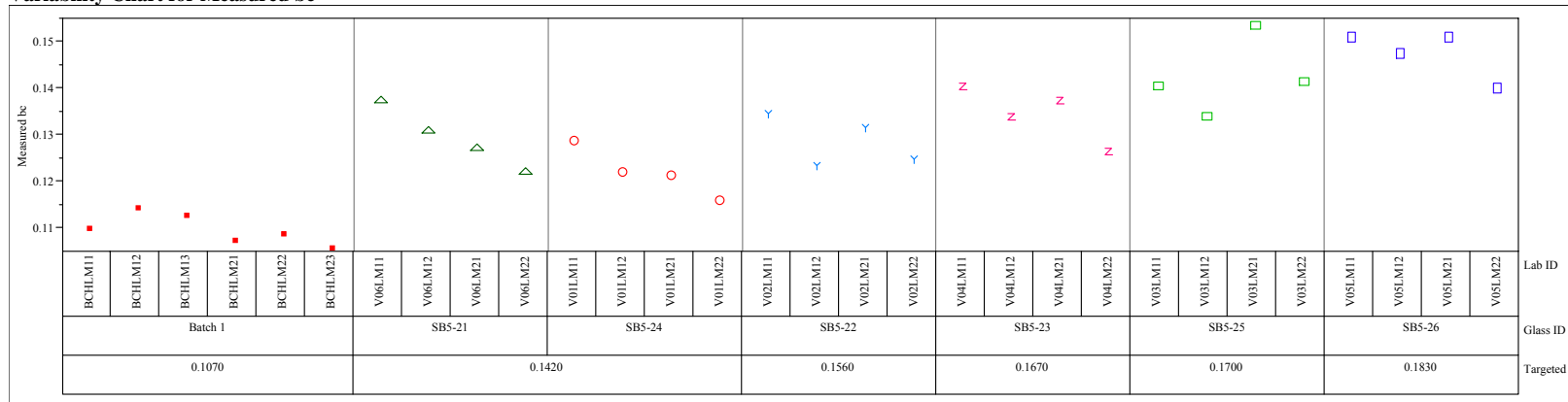
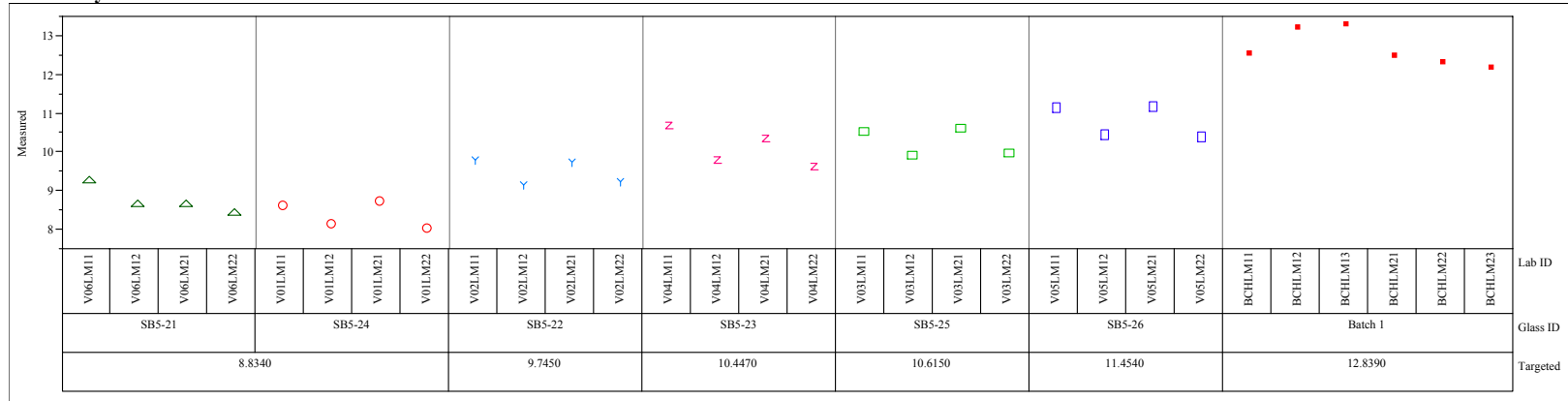


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Fe2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Fe2O3 (wt%)

Variability Chart for Measured bc

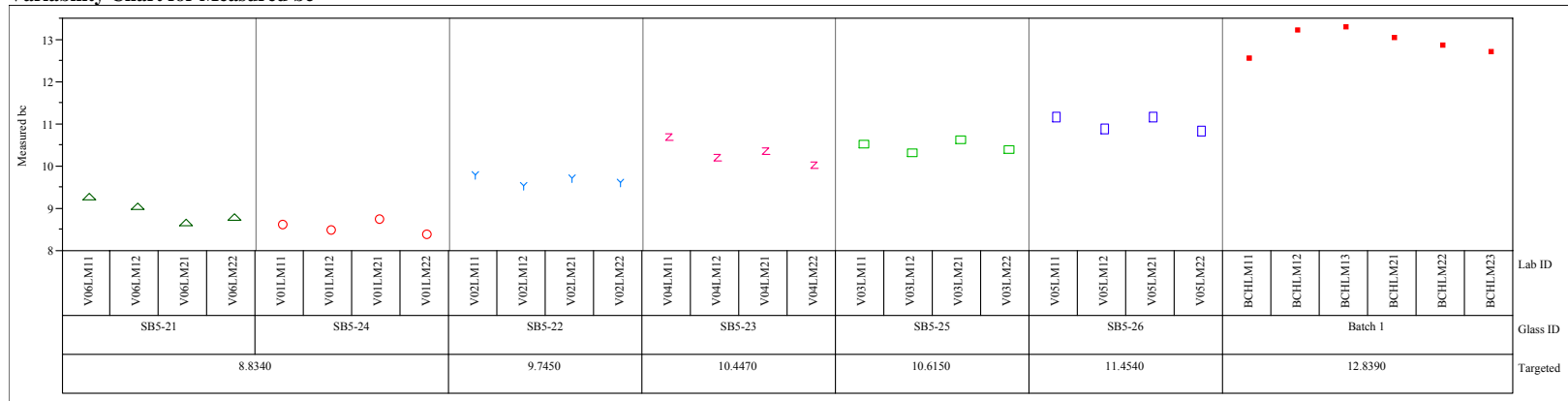
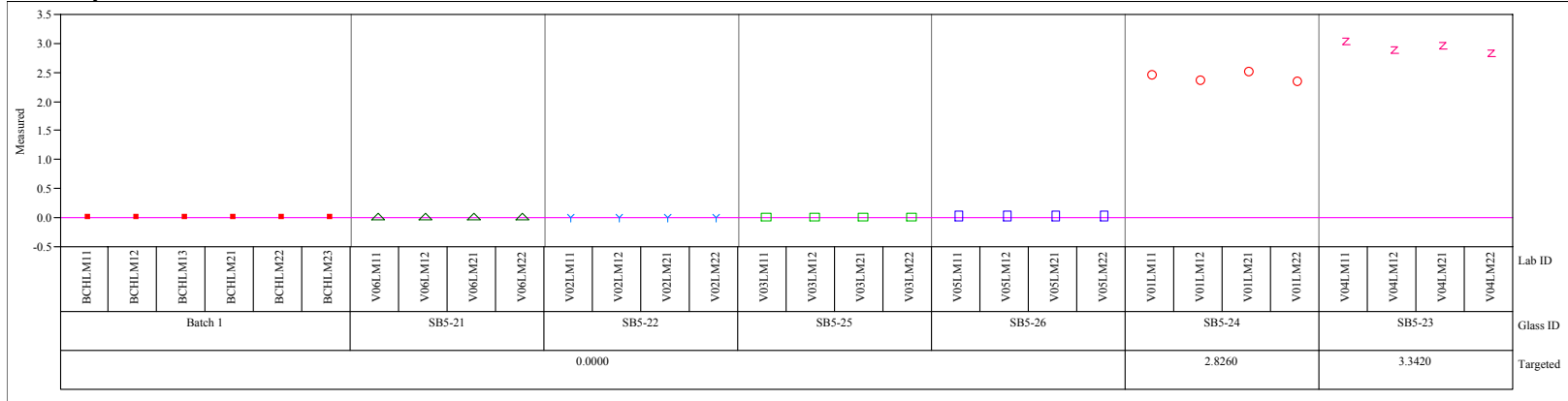


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=HfO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=HfO2 (wt%)

Variability Chart for Measured bc

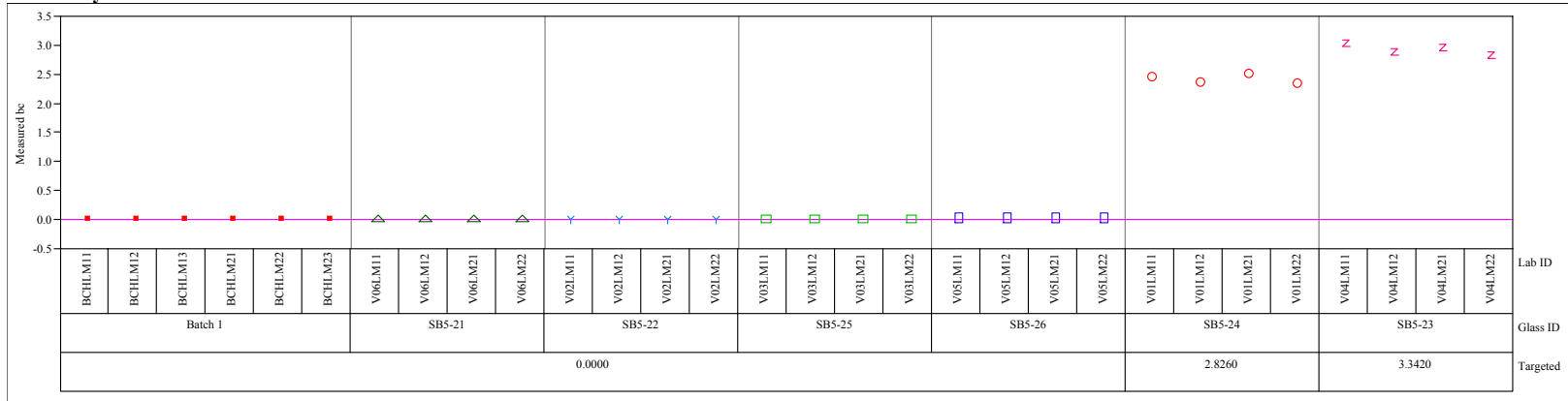
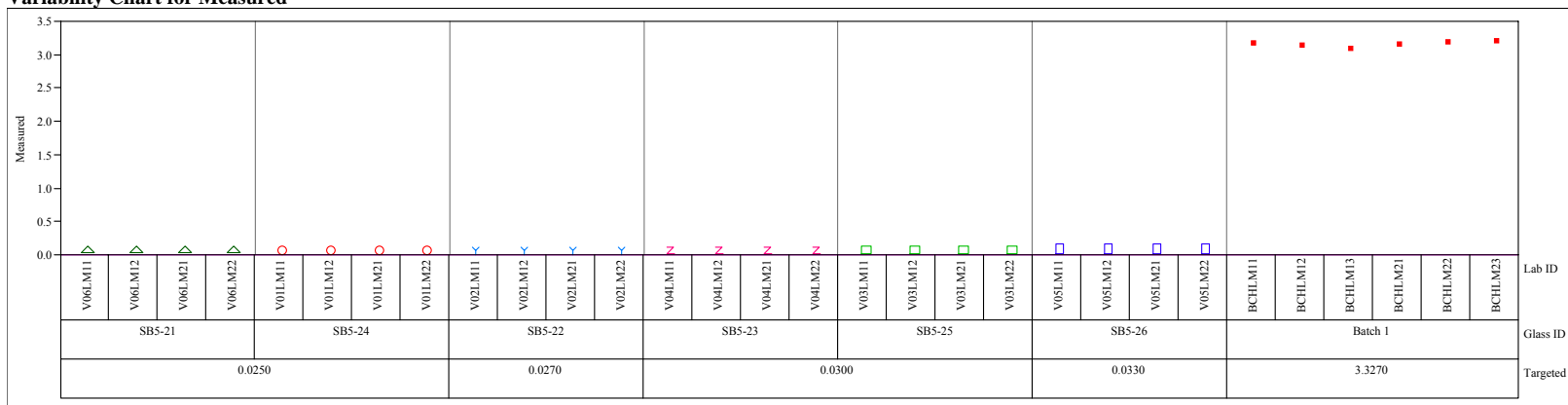


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=K2O (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=K2O (wt%)

Variability Chart for Measured bc

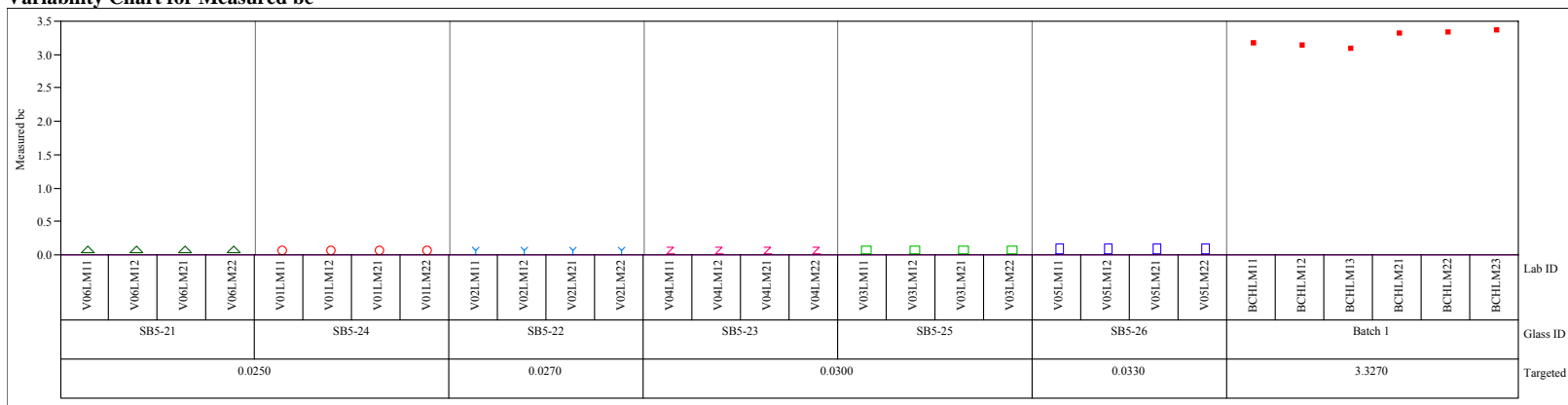
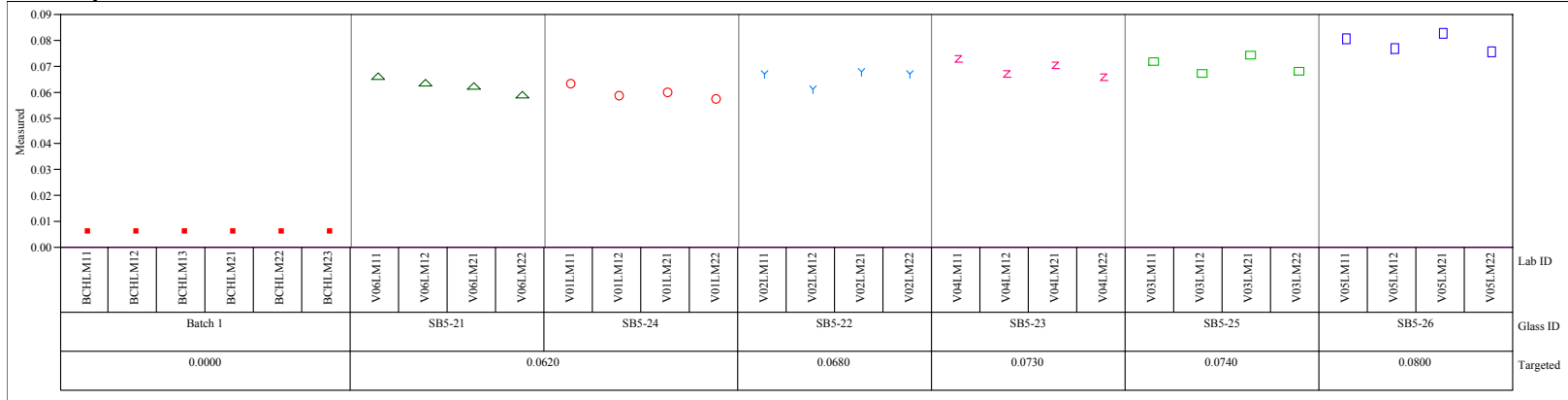


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=La2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=La2O3 (wt%)

Variability Chart for Measured bc

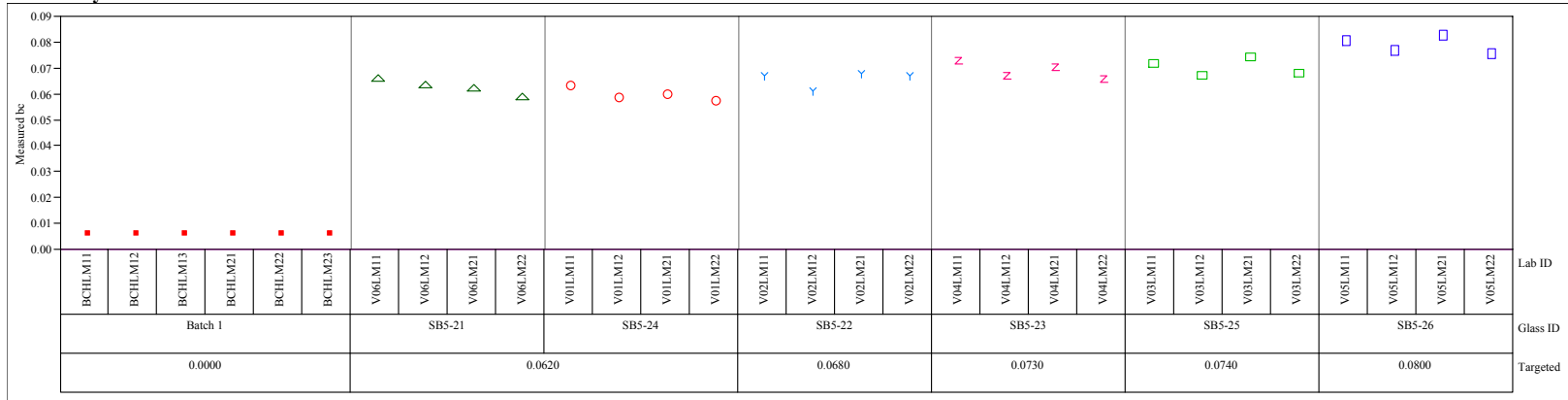
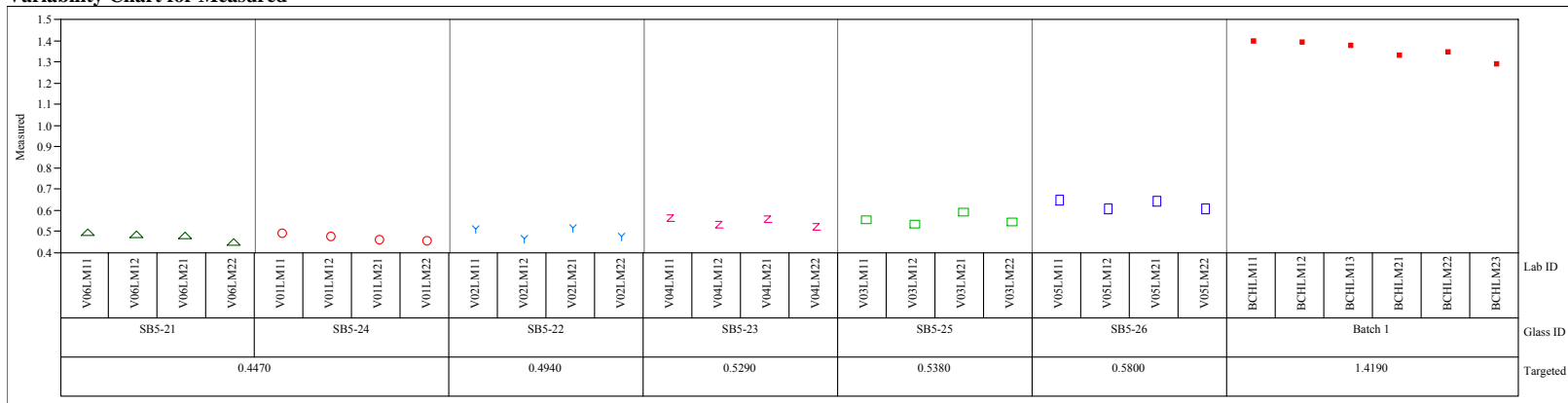


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=MgO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=MgO (wt%)

Variability Chart for Measured bc

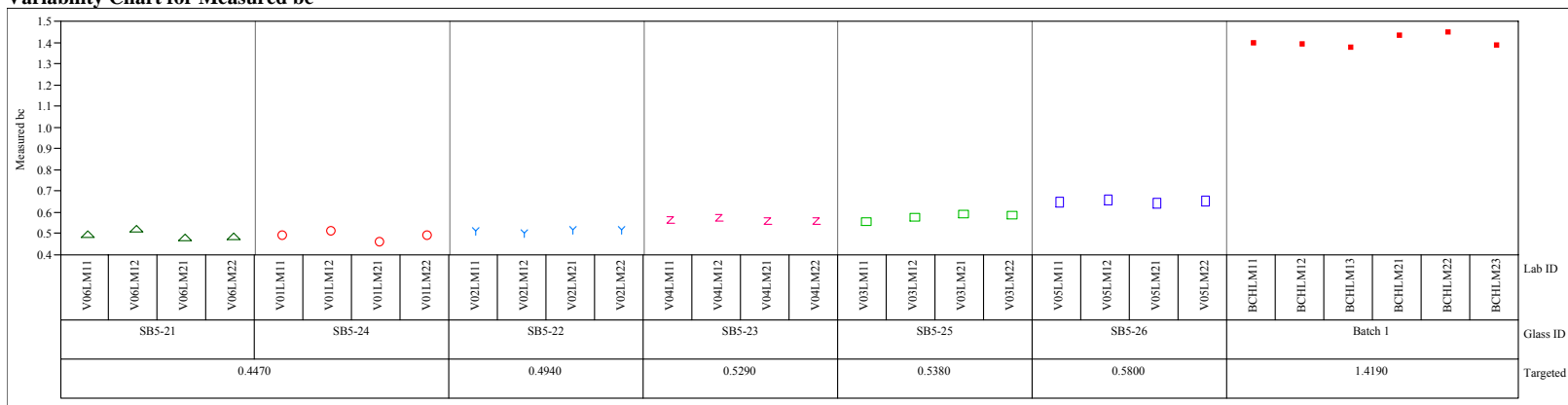
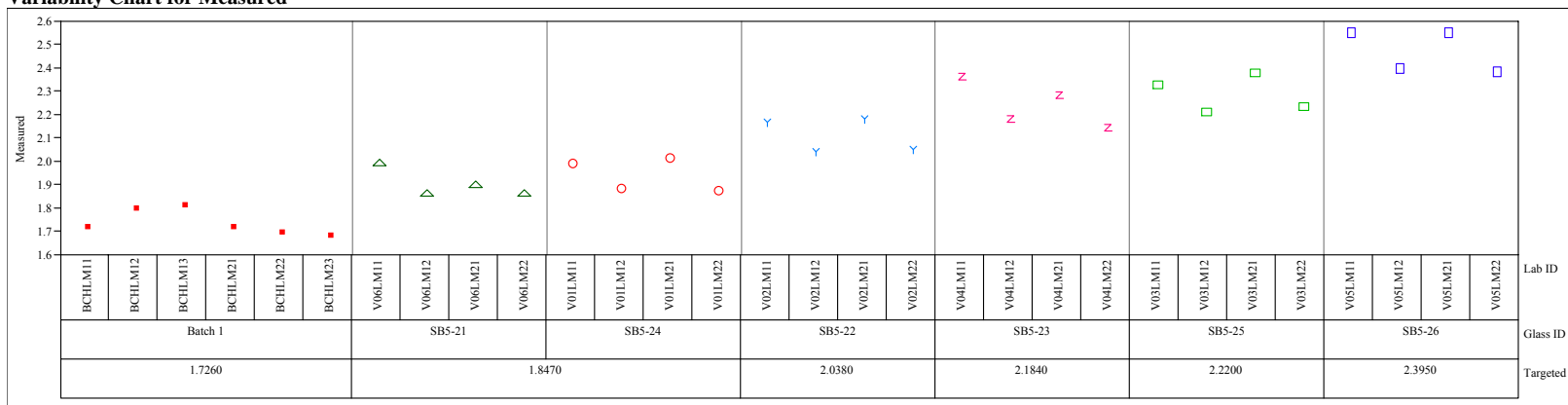


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=MnO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=MnO (wt%)

Variability Chart for Measured bc

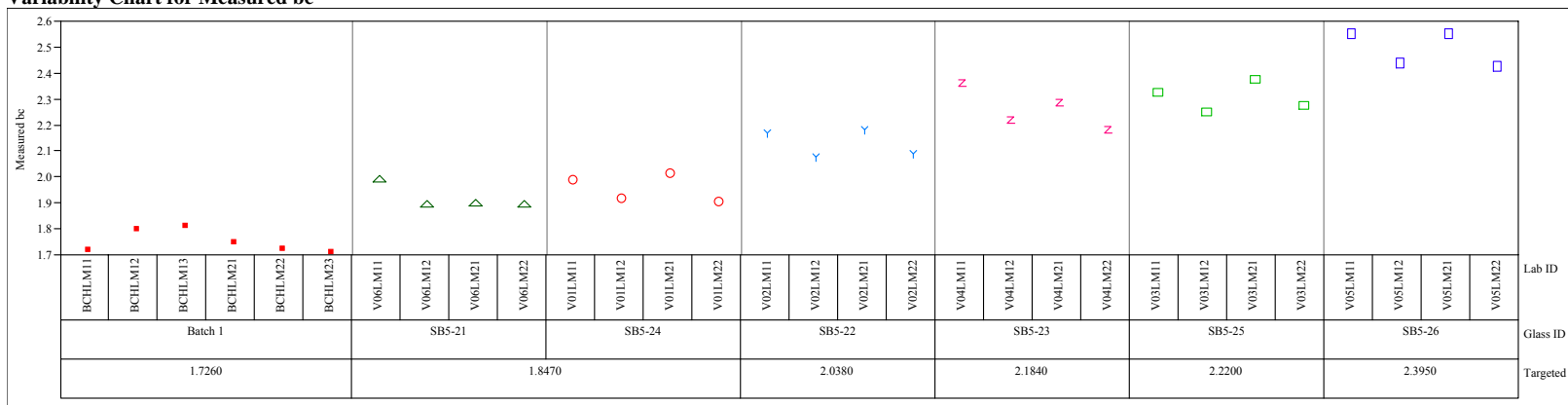
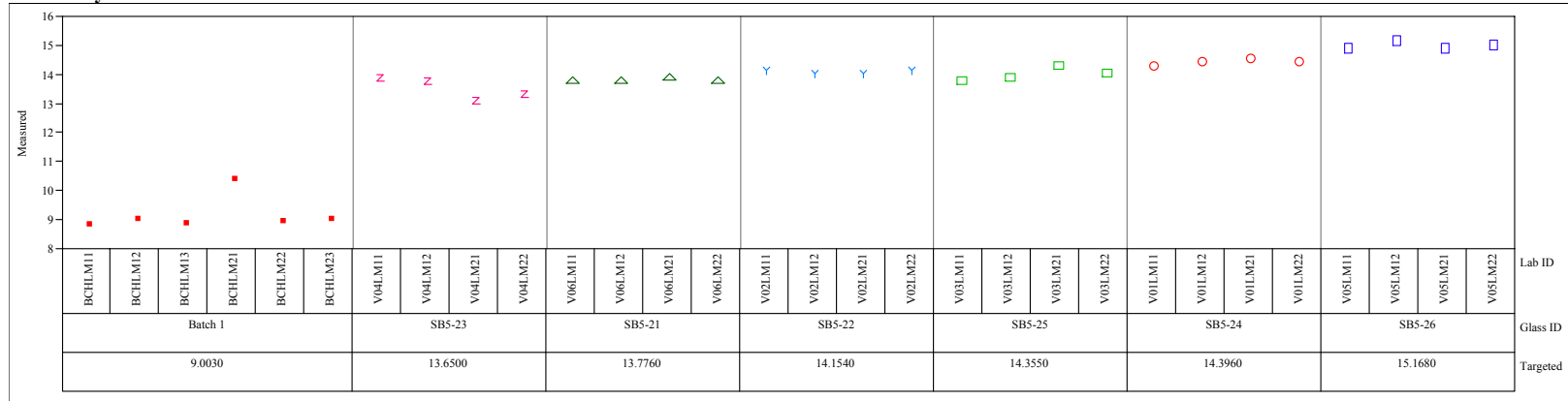


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Na2O (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Na2O (wt%)

Variability Chart for Measured bc

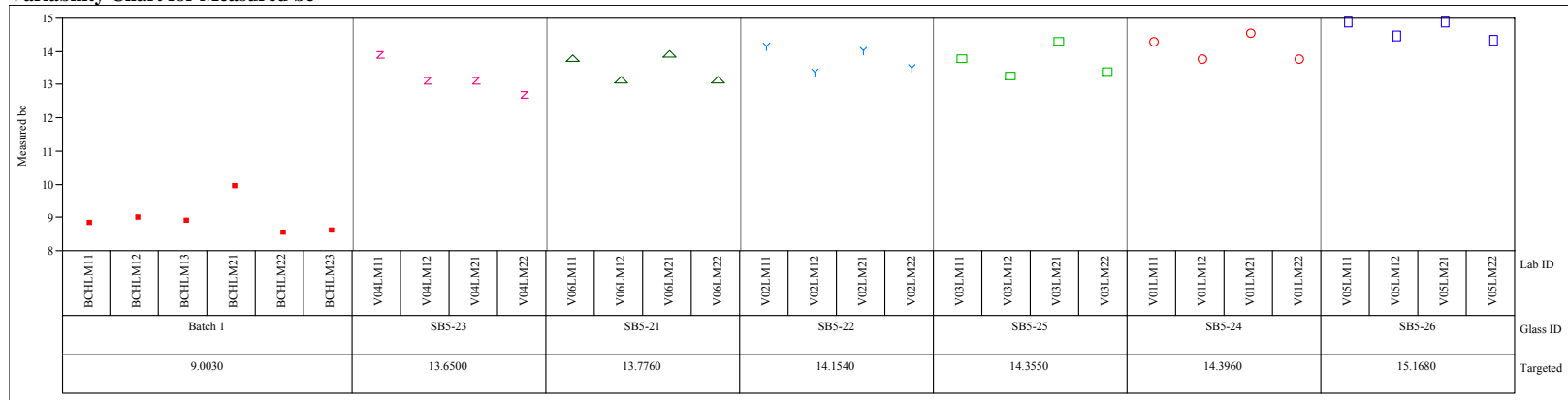
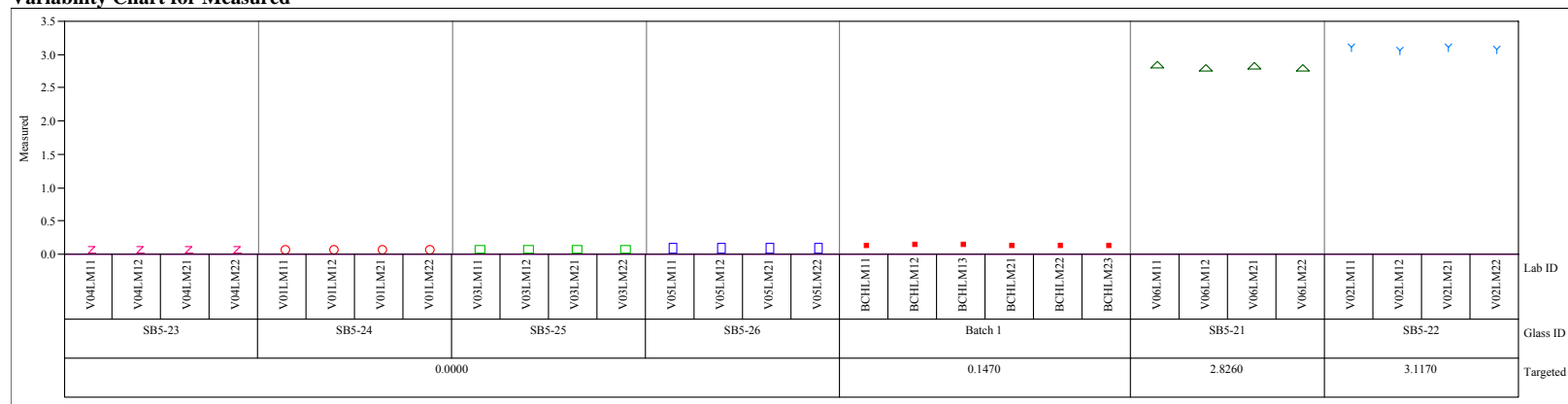


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Nd2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=Nd2O3 (wt%)

Variability Chart for Measured bc

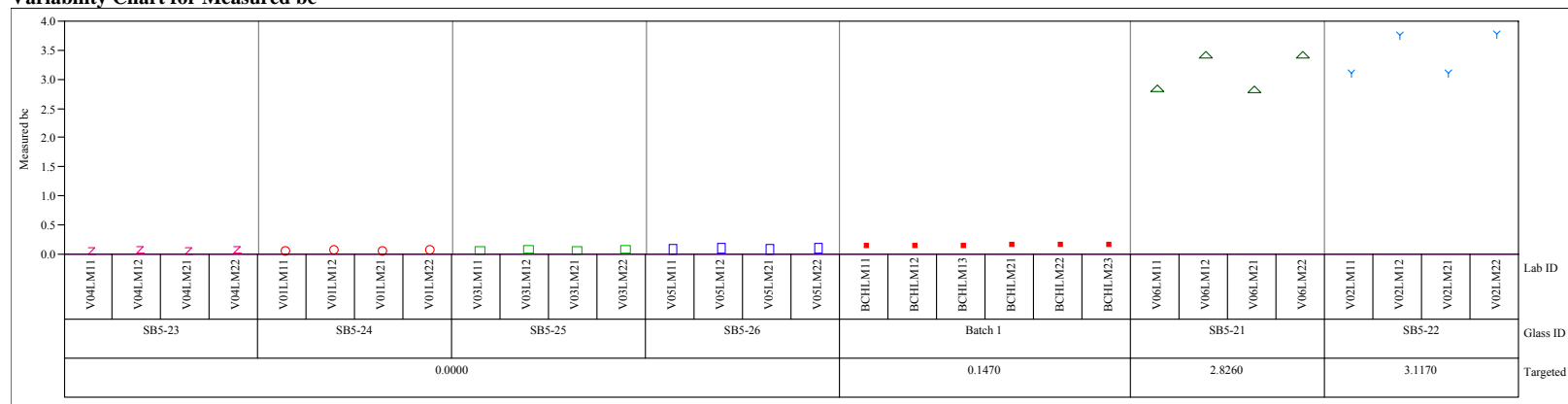
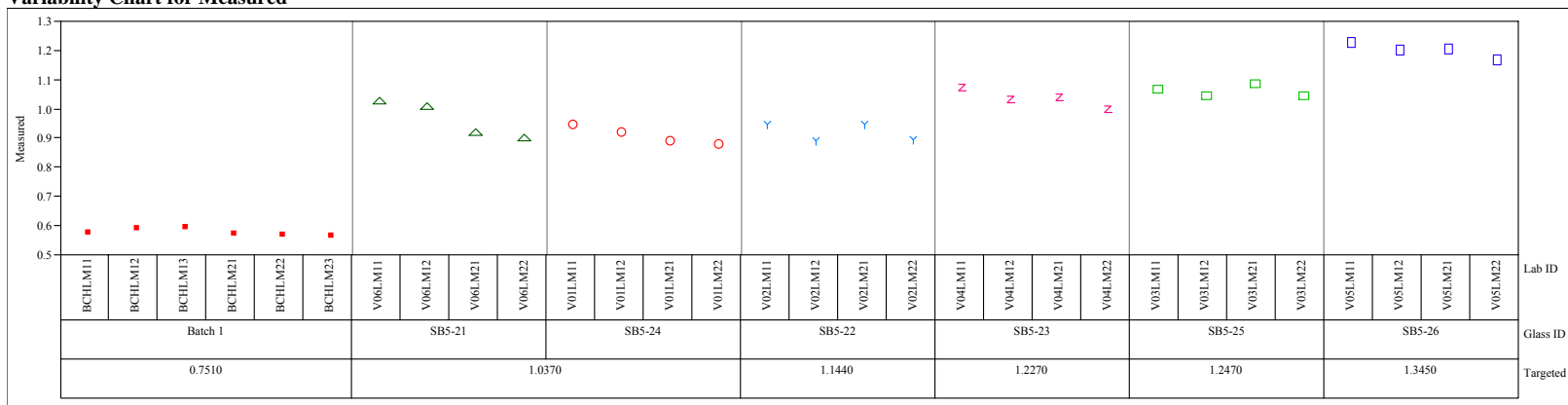


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=NiO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=NiO (wt%)

Variability Chart for Measured bc

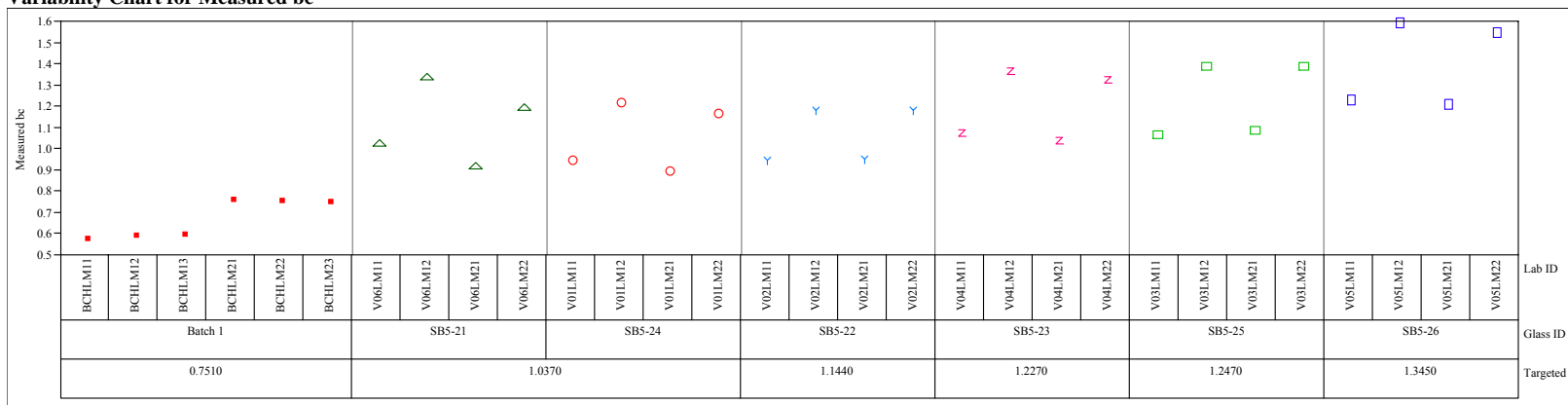
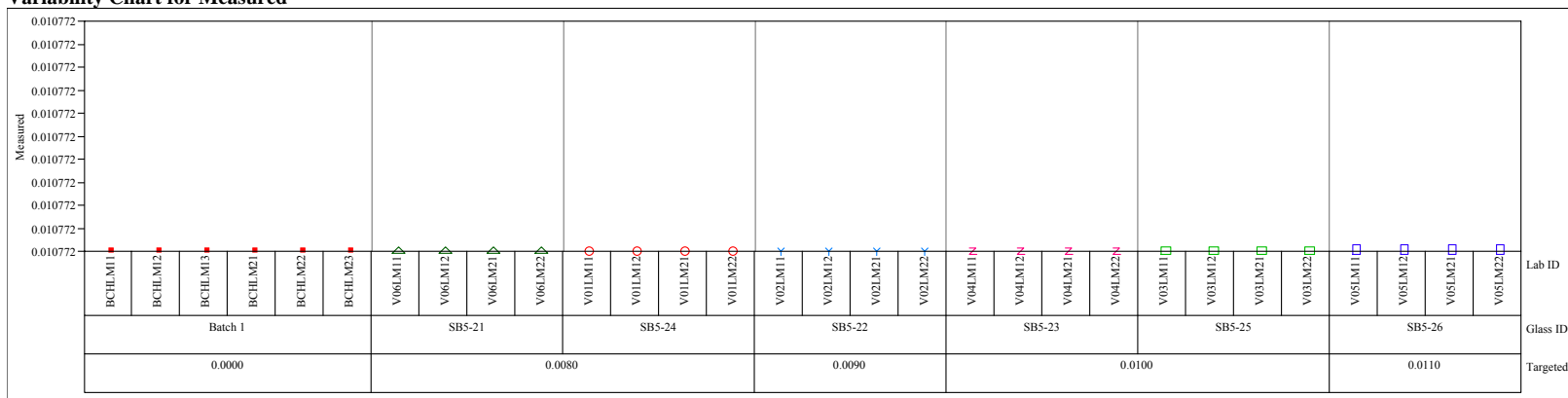


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=PbO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=PbO (wt%)

Variability Chart for Measured bc

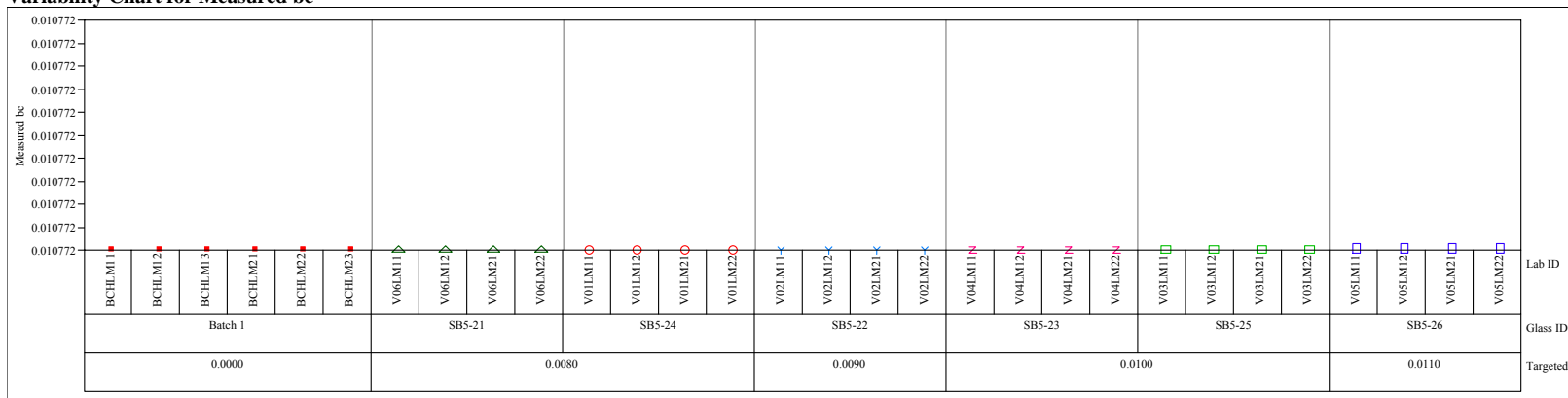
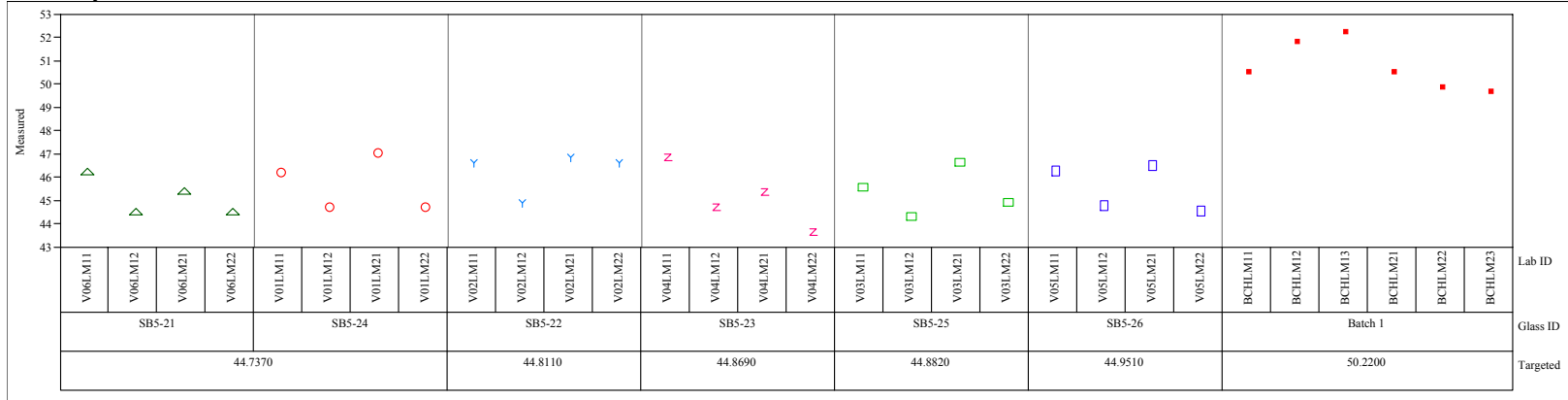


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=SiO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=SiO2 (wt%)

Variability Chart for Measured bc

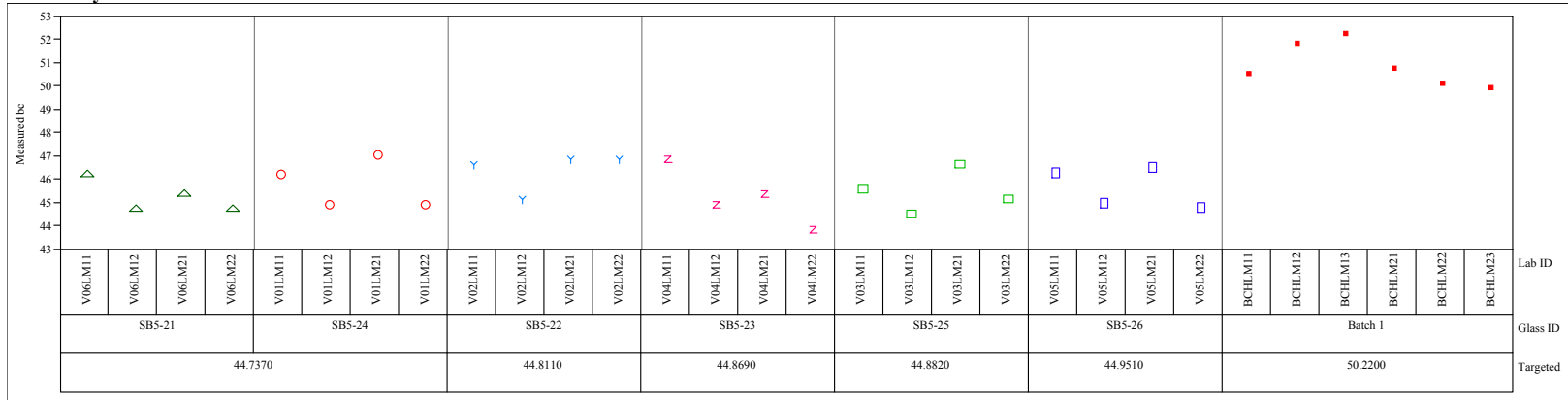
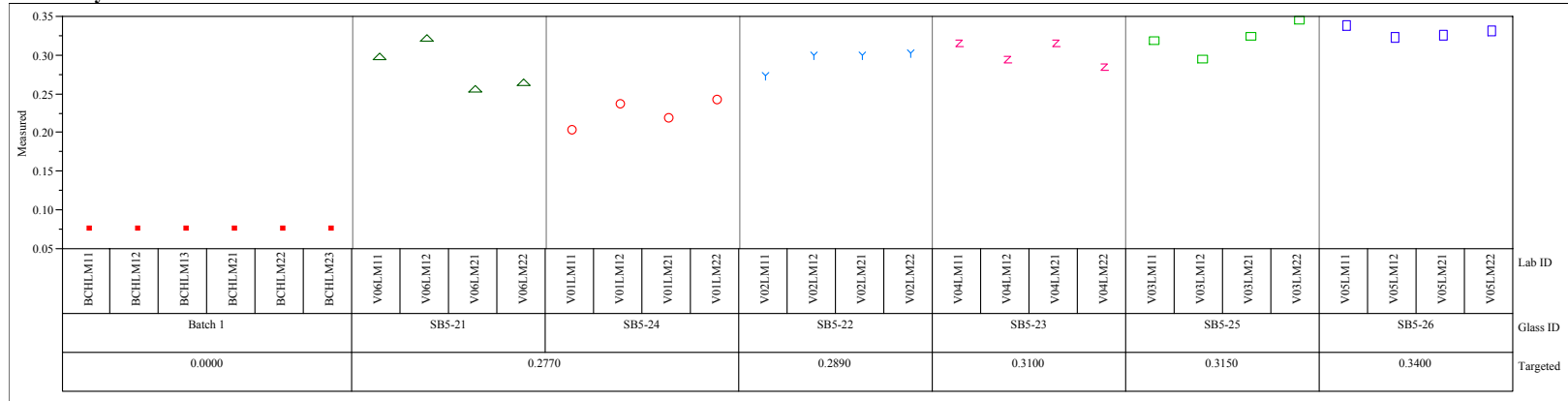


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=SO4 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=SO4 (wt%)

Variability Chart for Measured bc

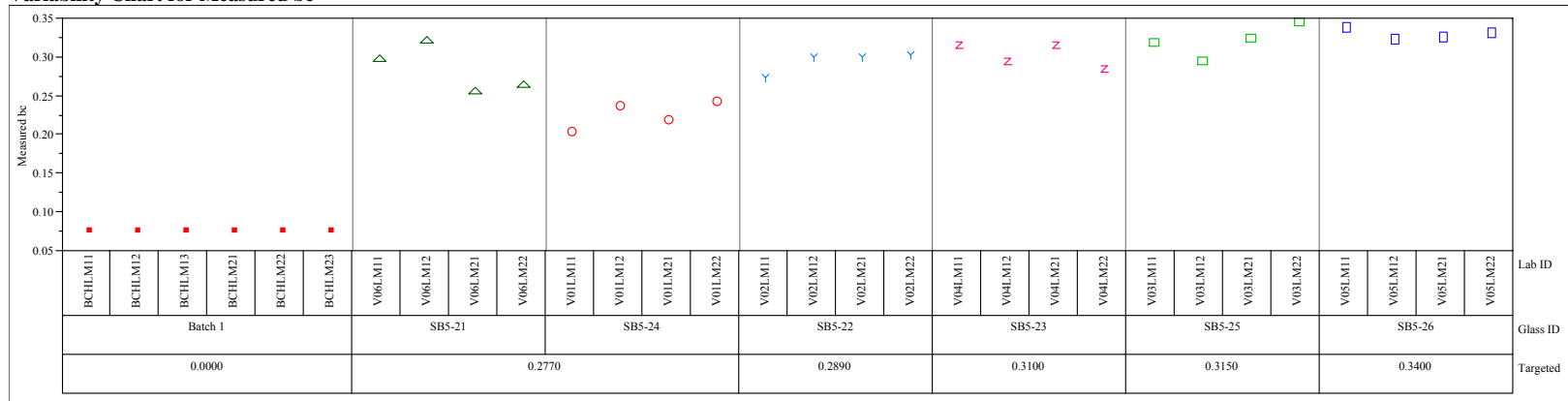
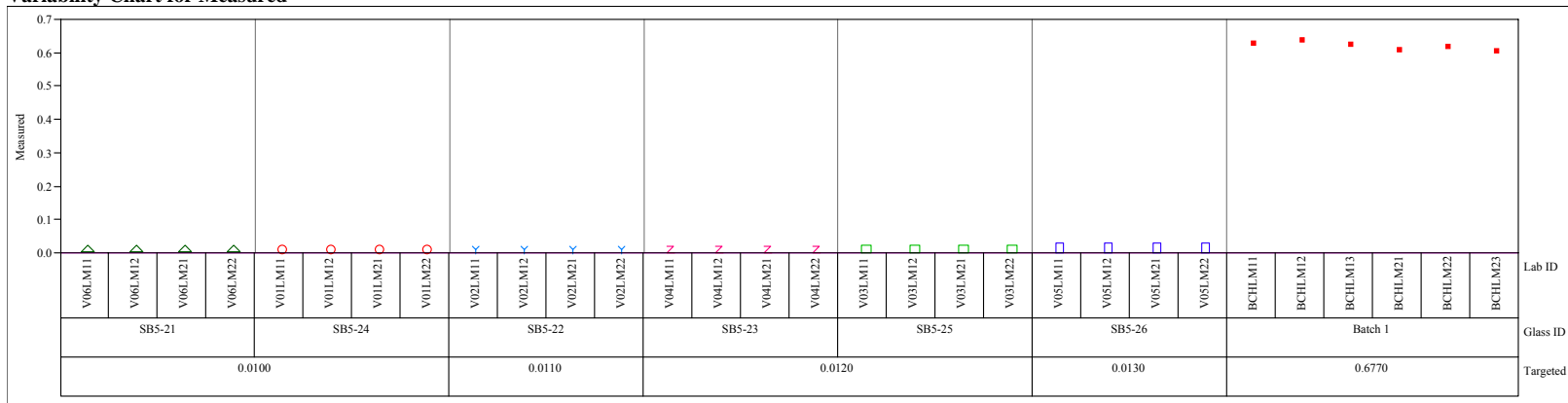


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=TiO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=TiO2 (wt%)

Variability Chart for Measured bc

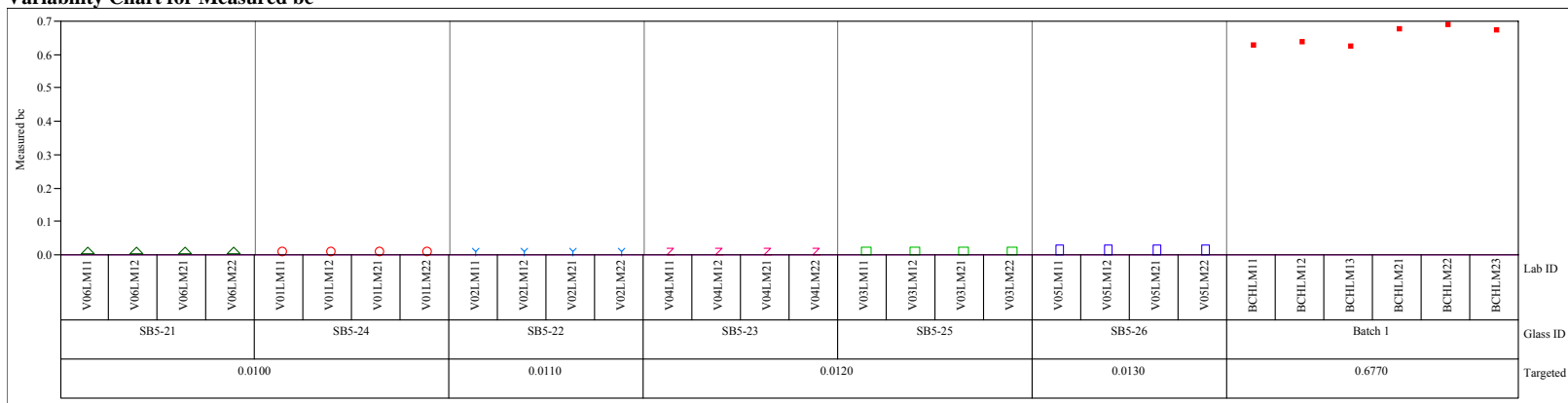
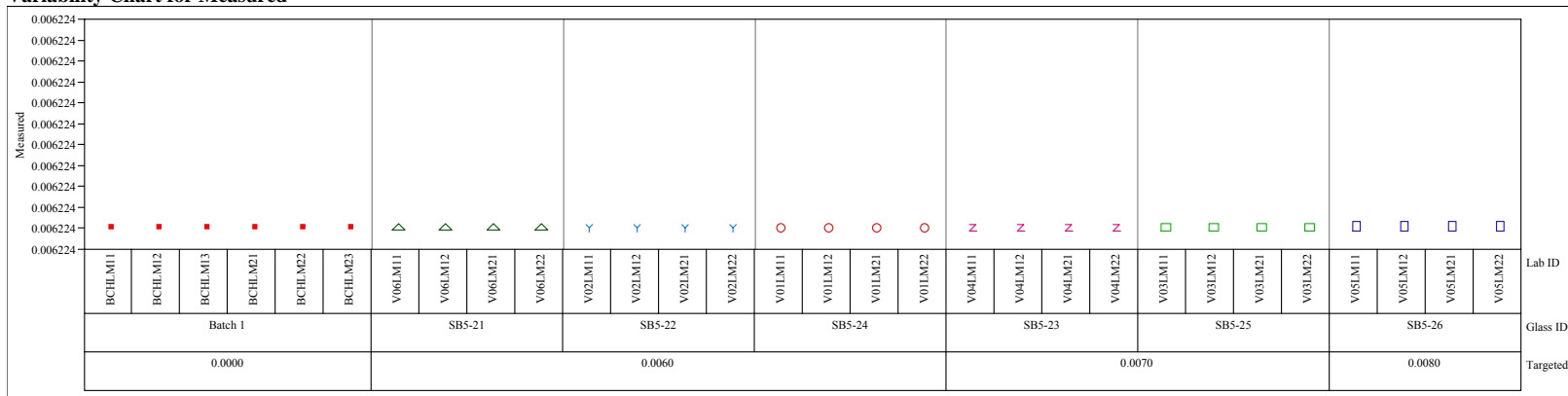


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=ZnO (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=ZnO (wt%)

Variability Chart for Measured bc

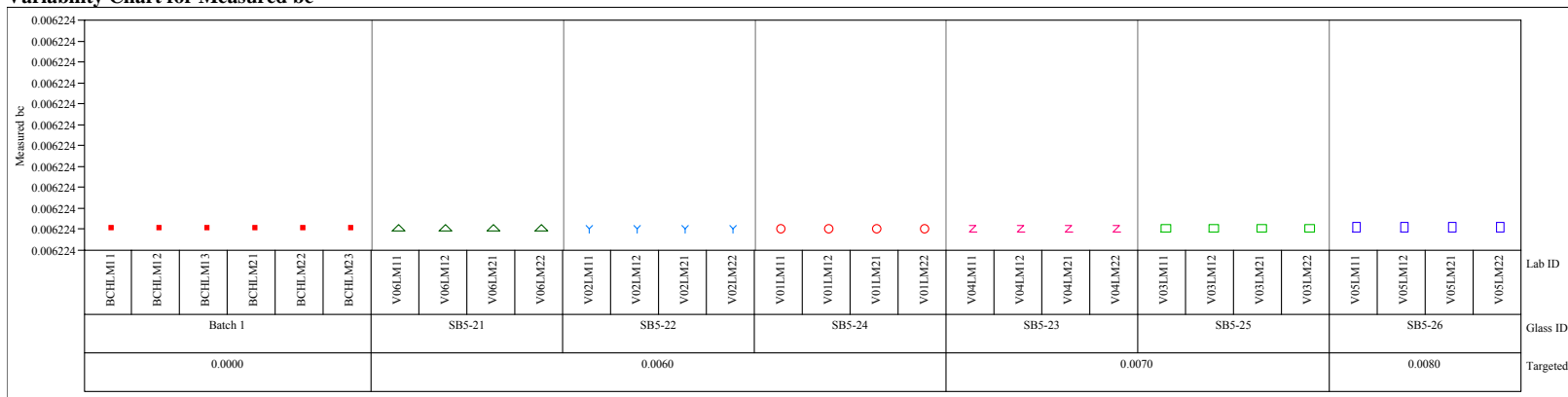
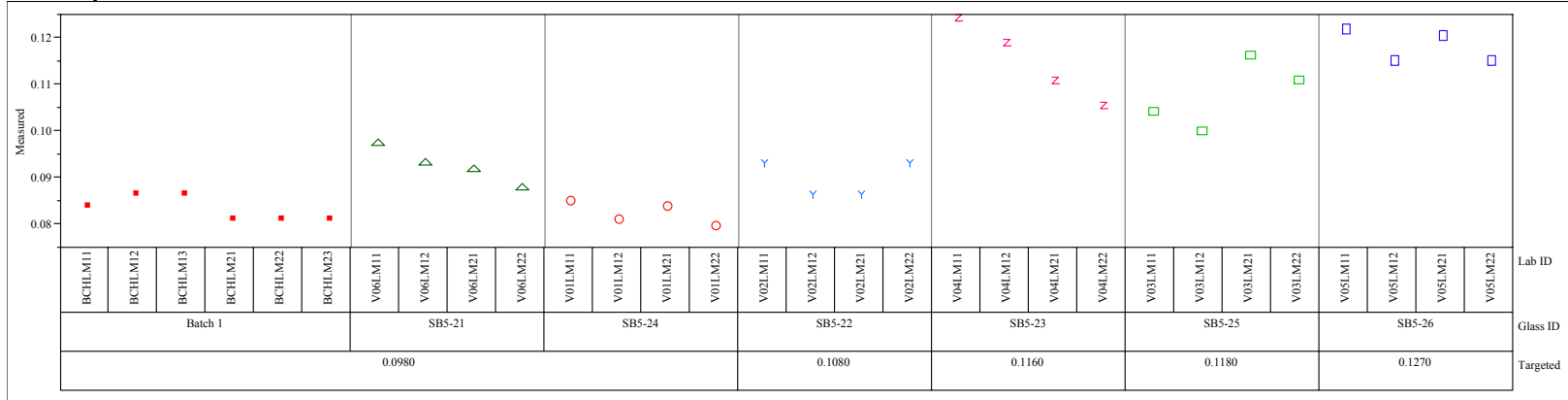


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=ZrO2 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=LM, Oxide=ZrO2 (wt%)

Variability Chart for Measured bc

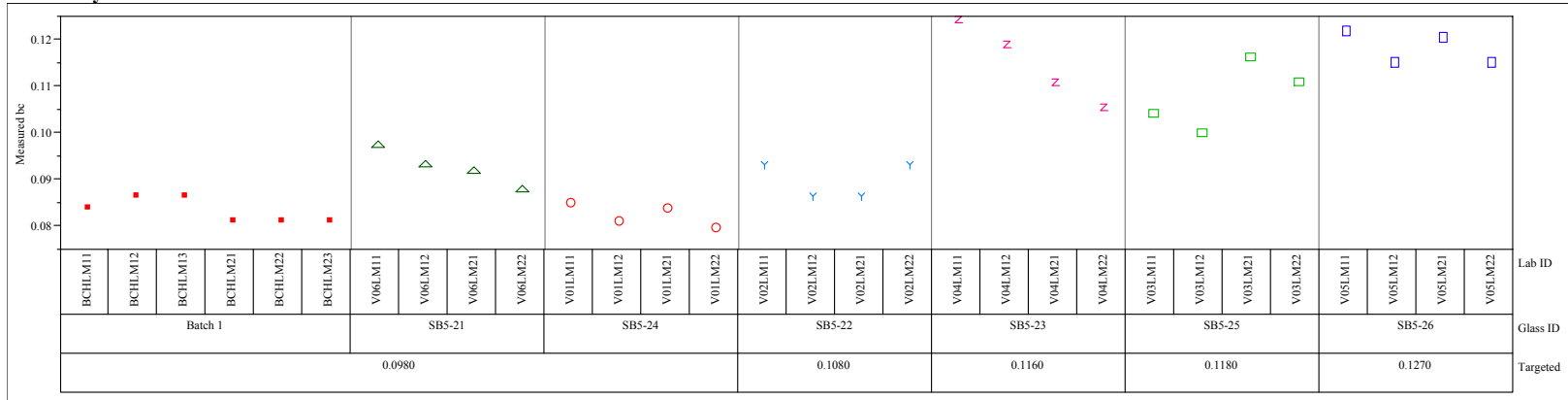
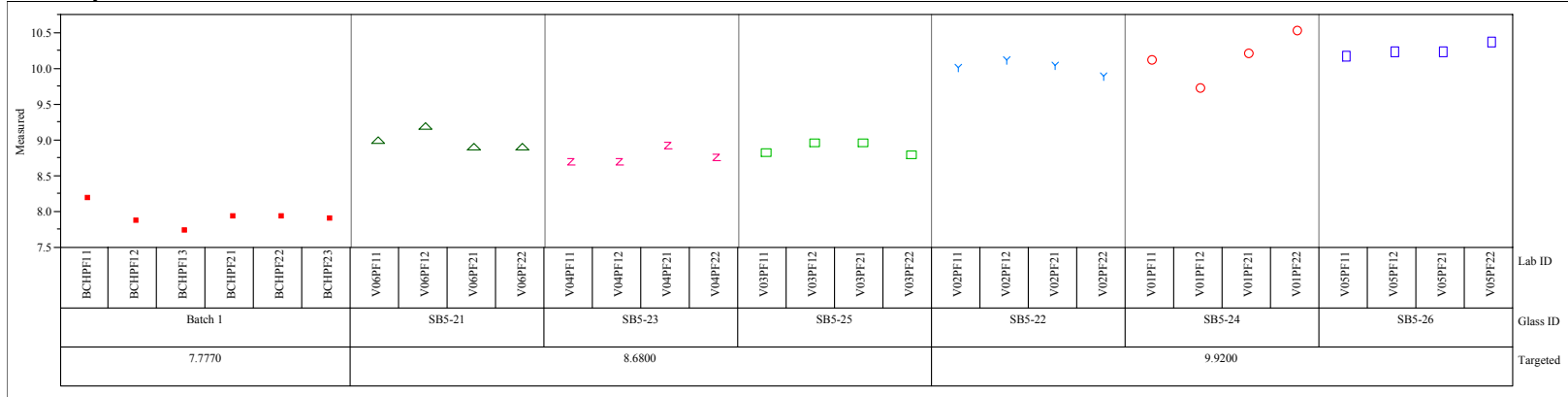


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=PF, Oxide=B2O3 (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=PF, Oxide=B2O3 (wt%)

Variability Chart for Measured bc

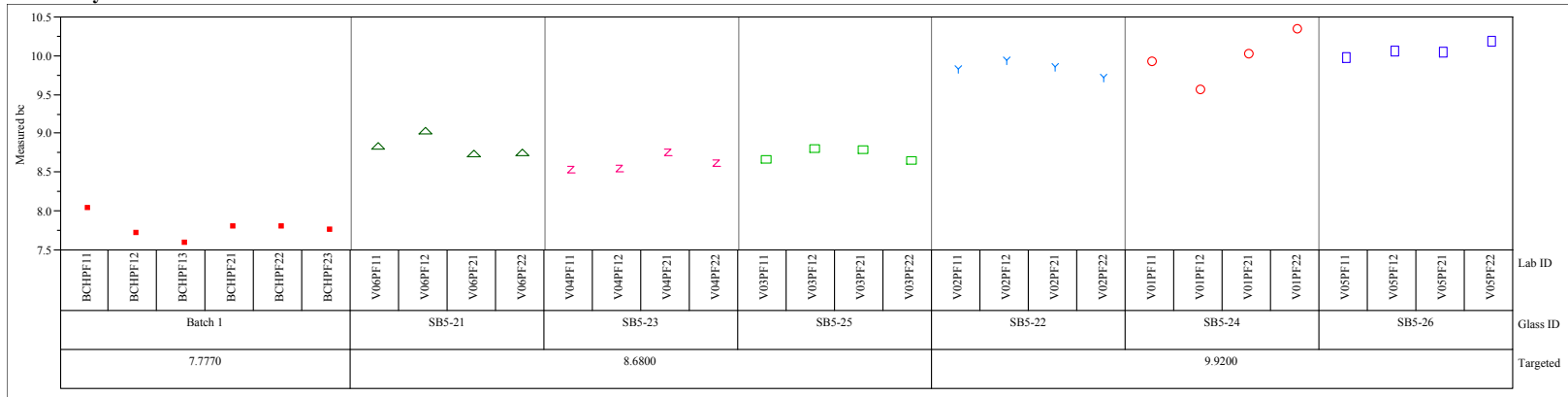
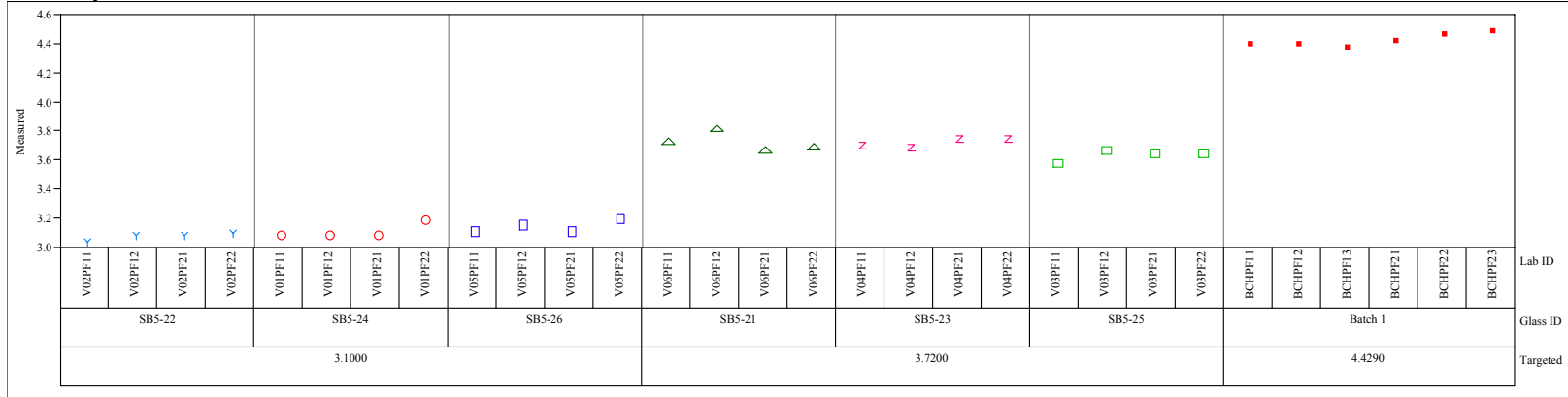


Exhibit A4. Oxide Measurements by Lab ID within Glass ID Including Auxiliary Measurements for LM Preps. (continued)

Analytical Plan =SRNL-SCS-2008-00043, Prep=PF, Oxide=Li2O (wt%)

Variability Chart for Measured



Analytical Plan =SRNL-SCS-2008-00043, Prep=PF, Oxide=Li2O (wt%)

Variability Chart for Measured bc

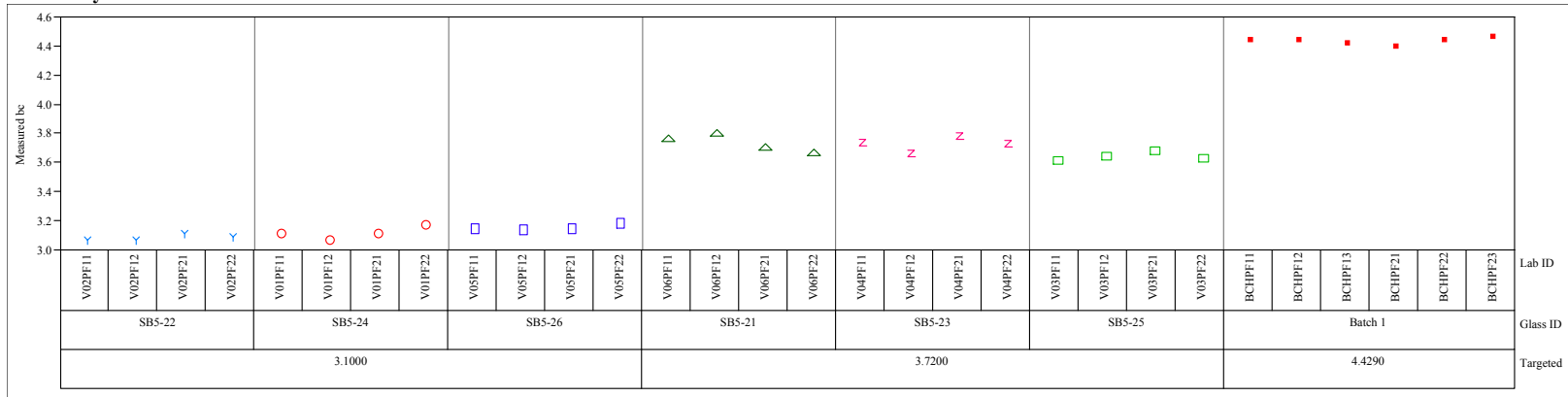
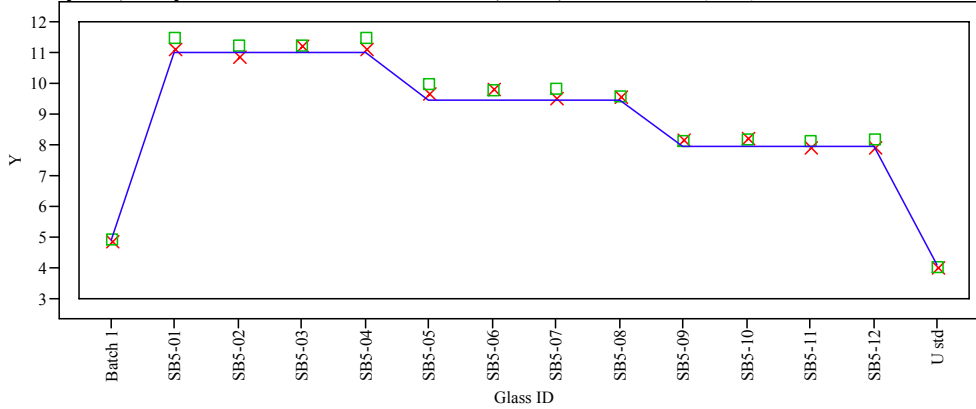
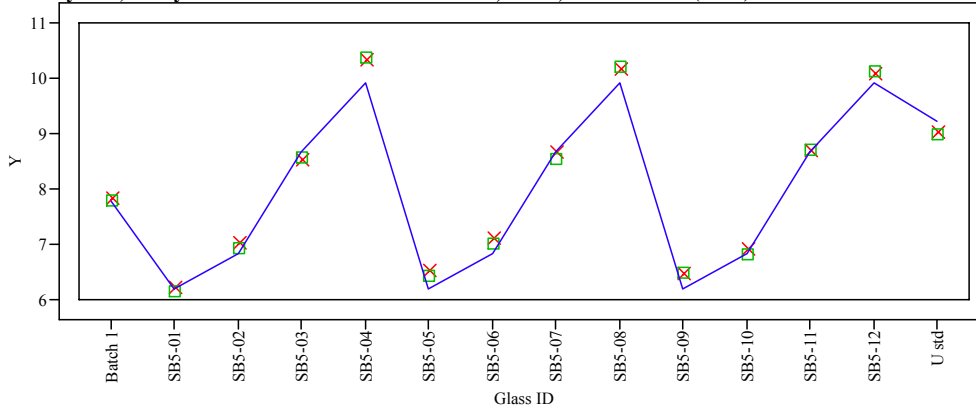


Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set.

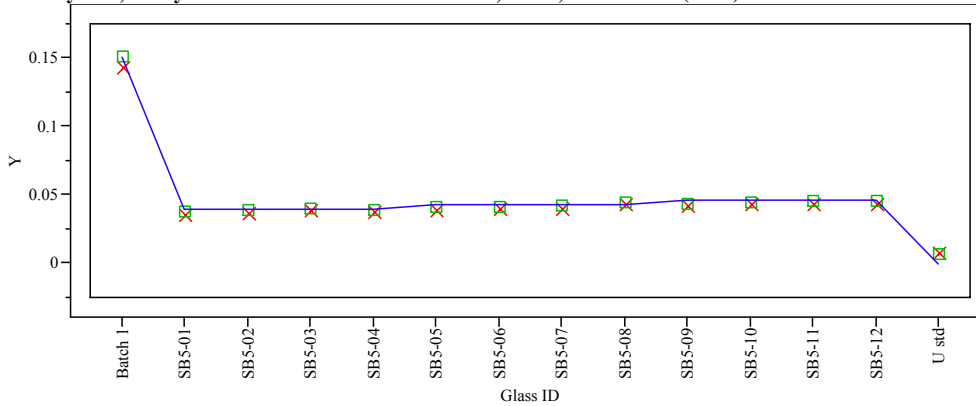
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Al2O3 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=B2O3 (wt%)



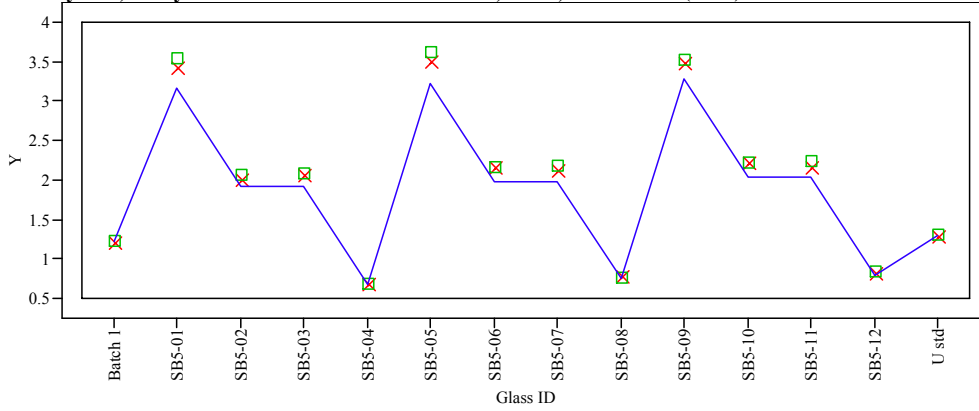
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=BaO (wt%)



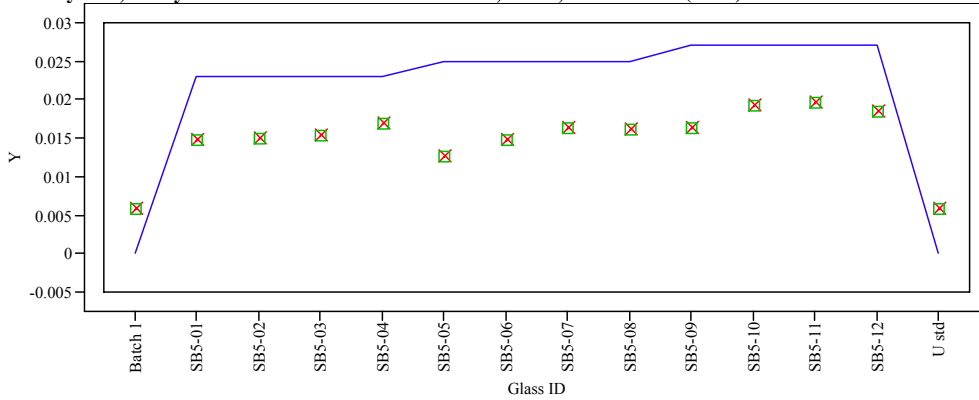
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

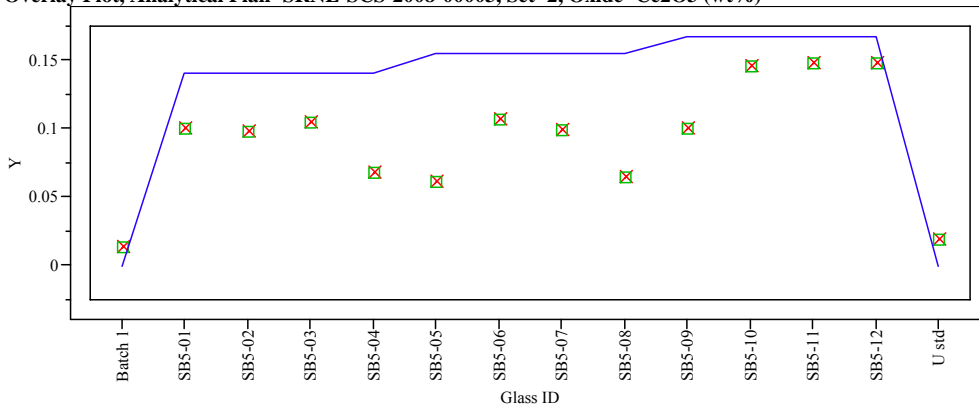
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=CaO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=CdO (wt%)



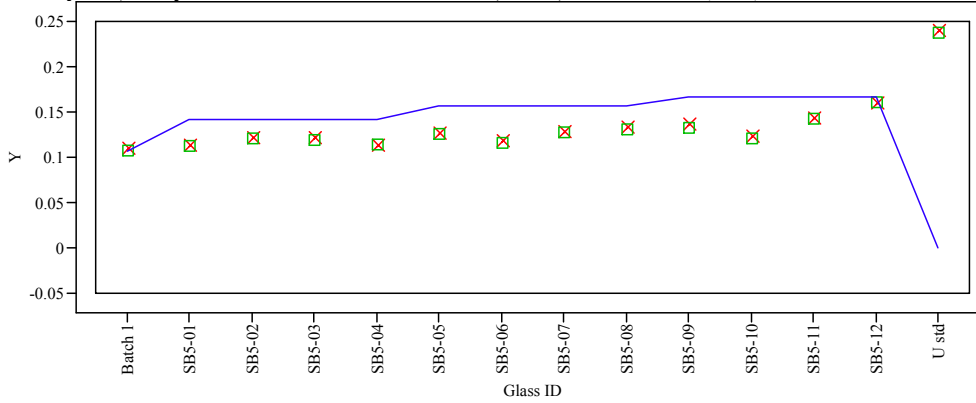
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Ce2O3 (wt%)



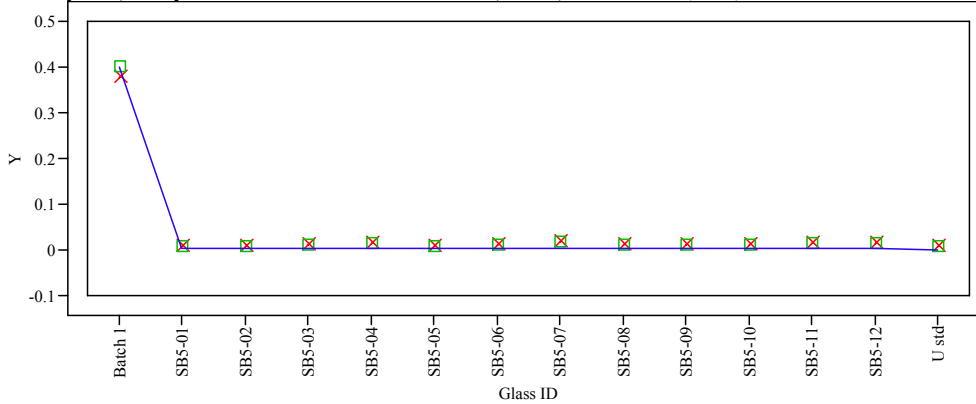
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

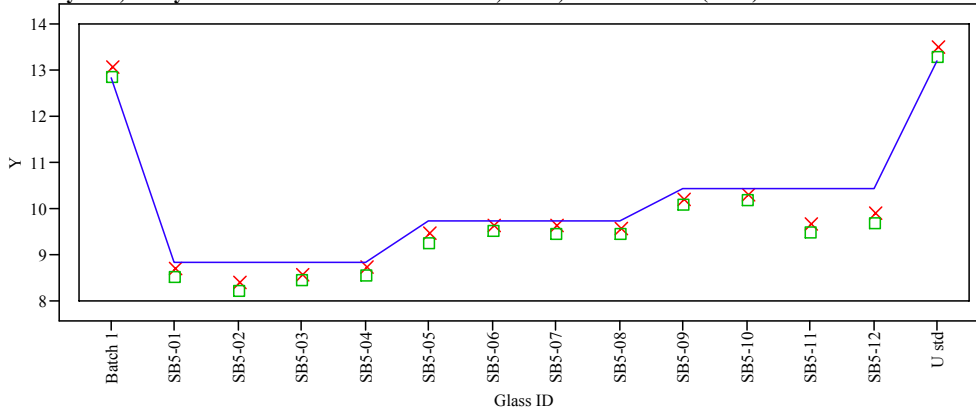
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Cr2O3 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=CuO (wt%)



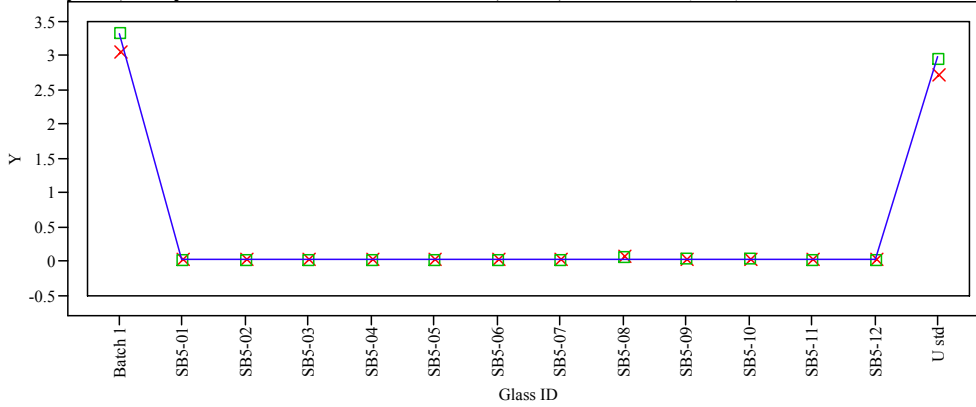
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Fe2O3 (wt%)



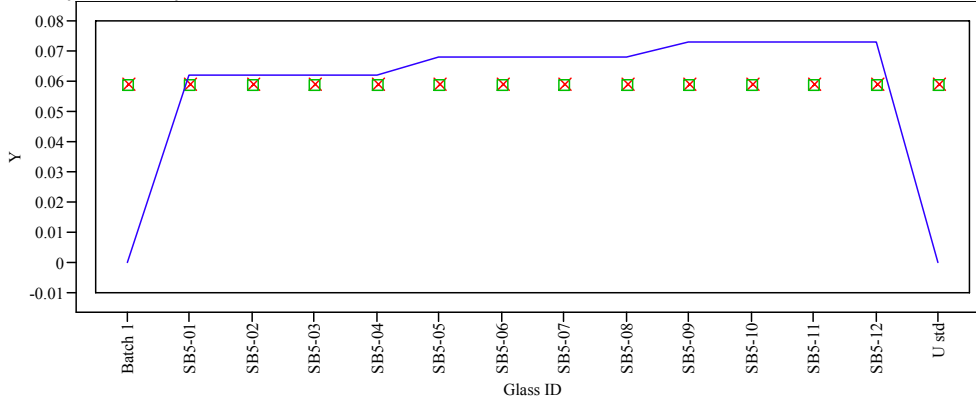
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

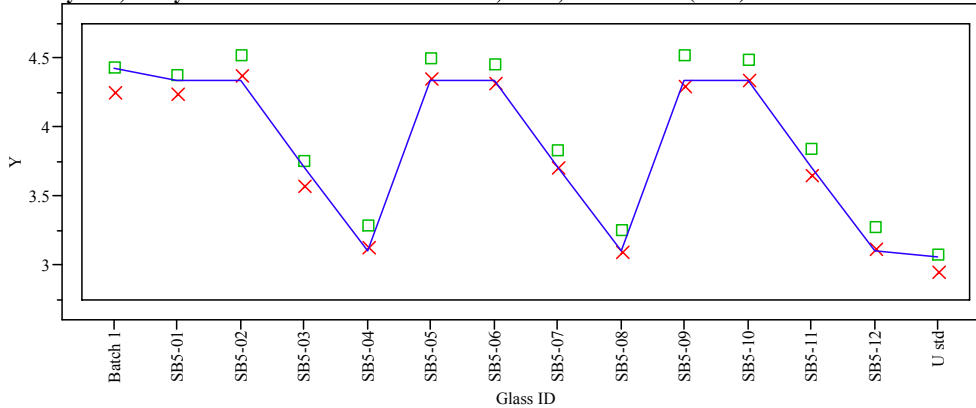
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=K2O (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=La2O3 (wt%)



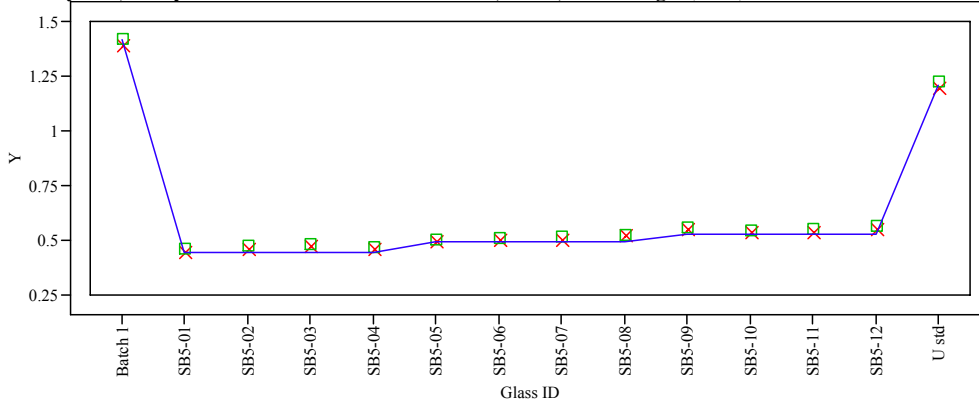
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Li2O (wt%)



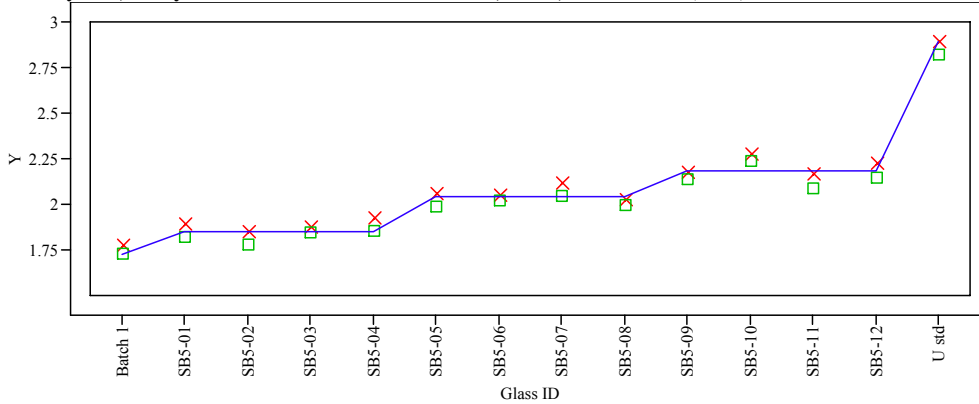
Y ✕ Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

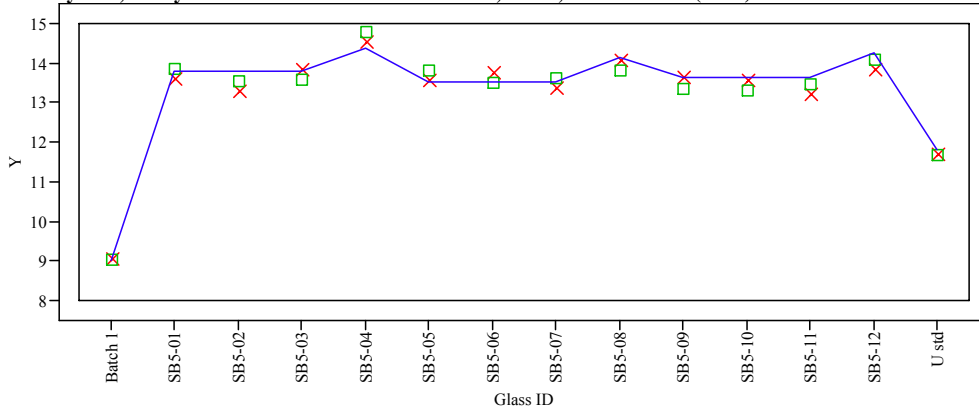
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=MgO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=MnO (wt%)



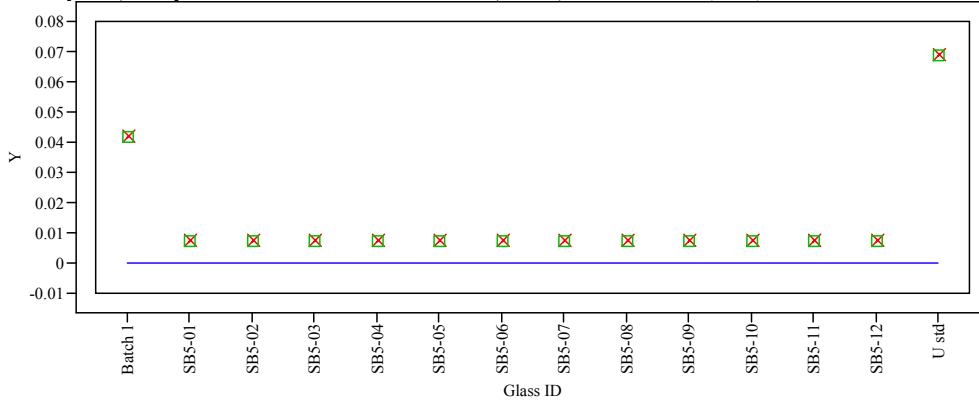
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Na2O (wt%)



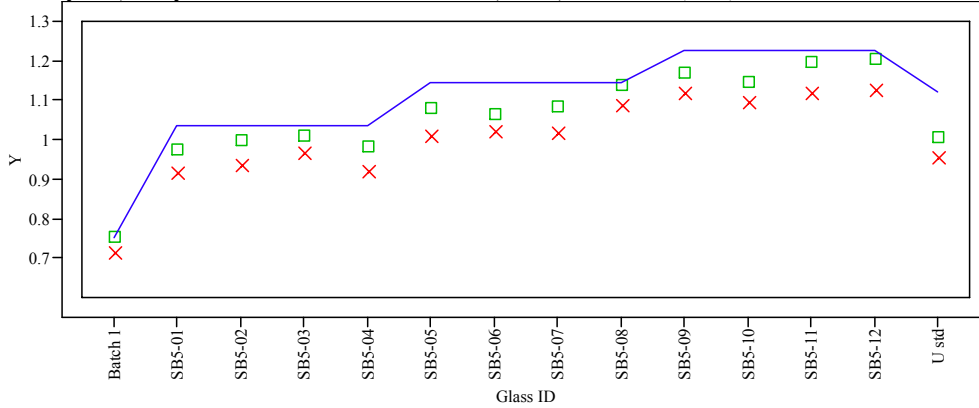
Y ✕ Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

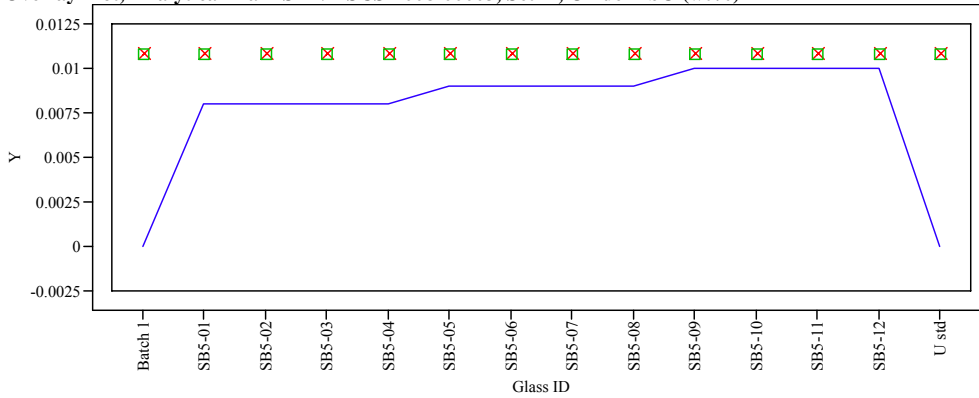
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=Nb2O5 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=NiO (wt%)



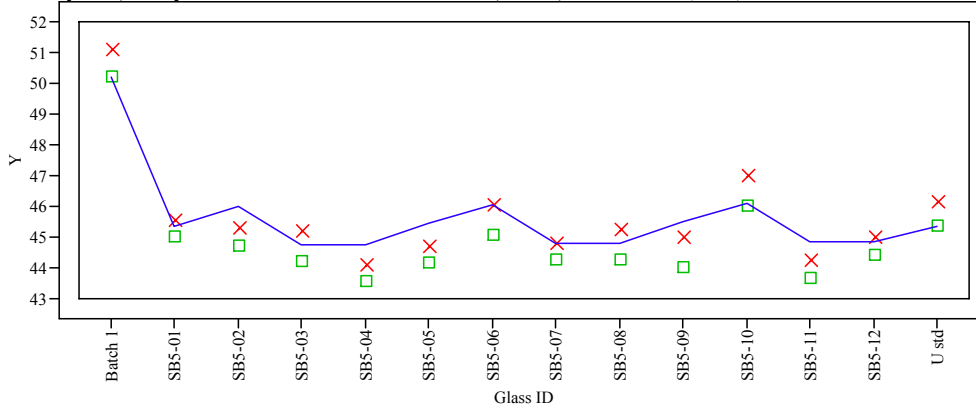
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=PbO (wt%)



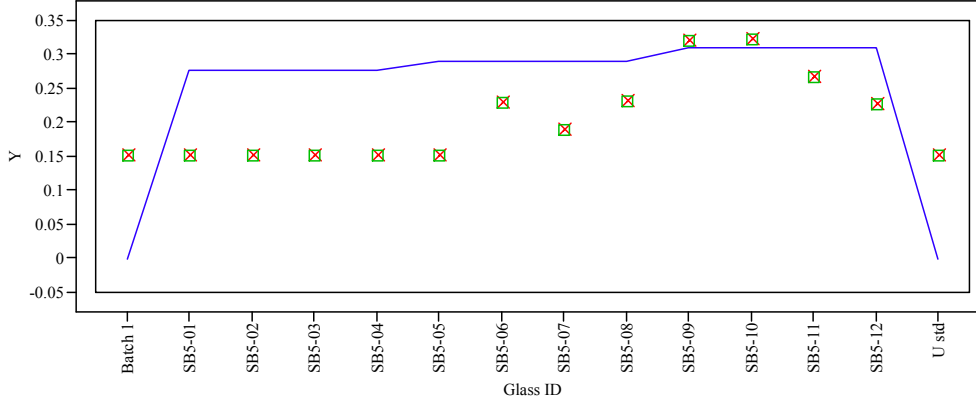
Y ✕ Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

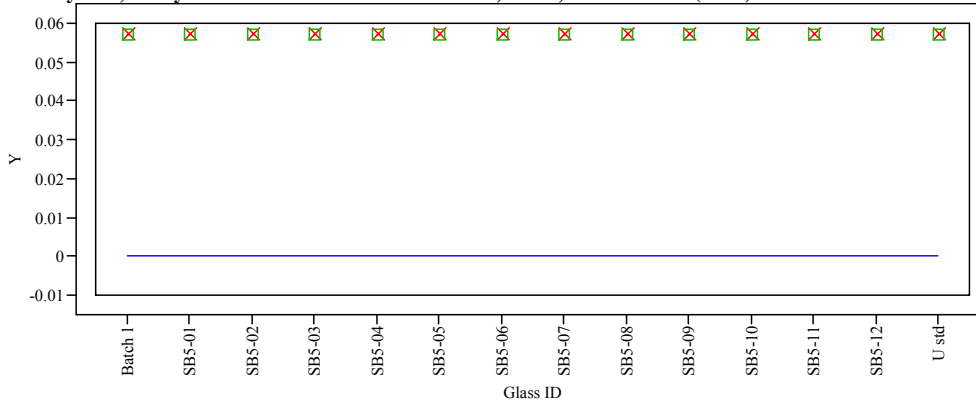
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=SiO2 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=SO4 (wt%)



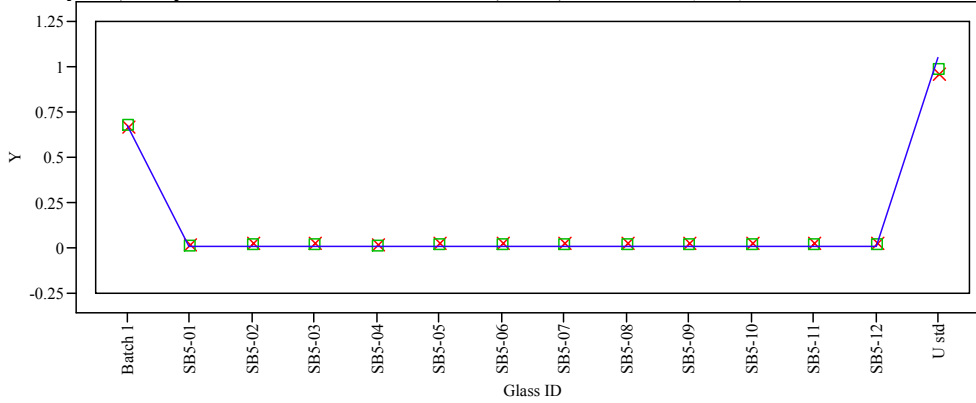
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=ThO2 (wt%)



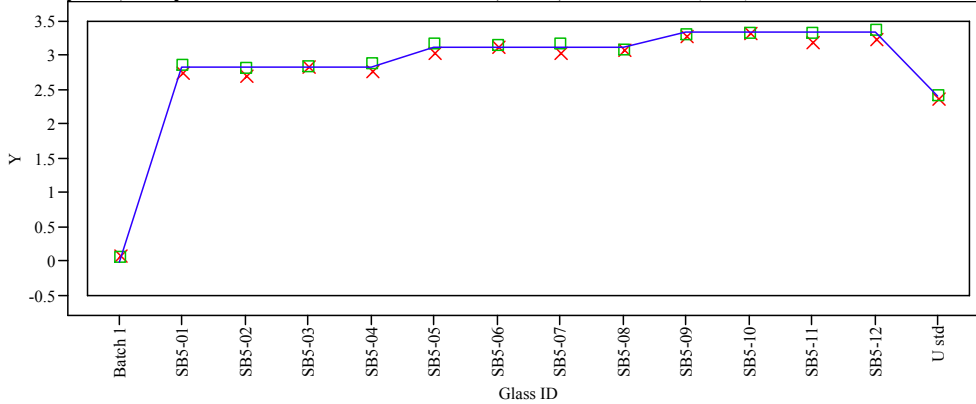
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

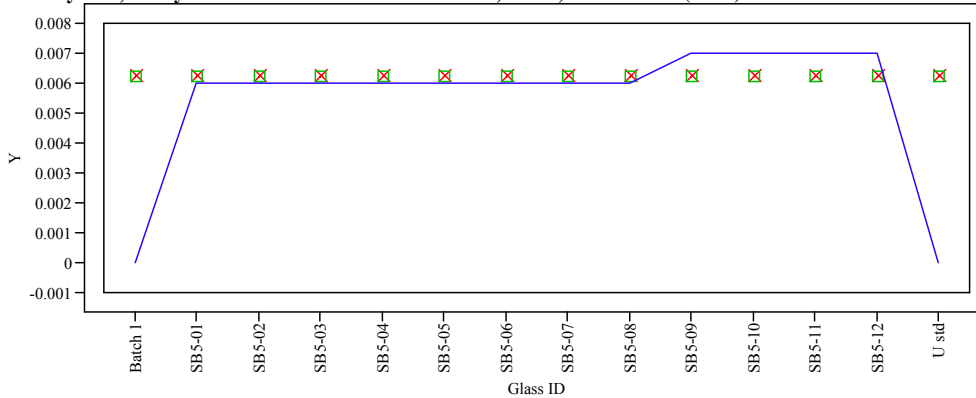
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=TiO2 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=U3O8 (wt%)



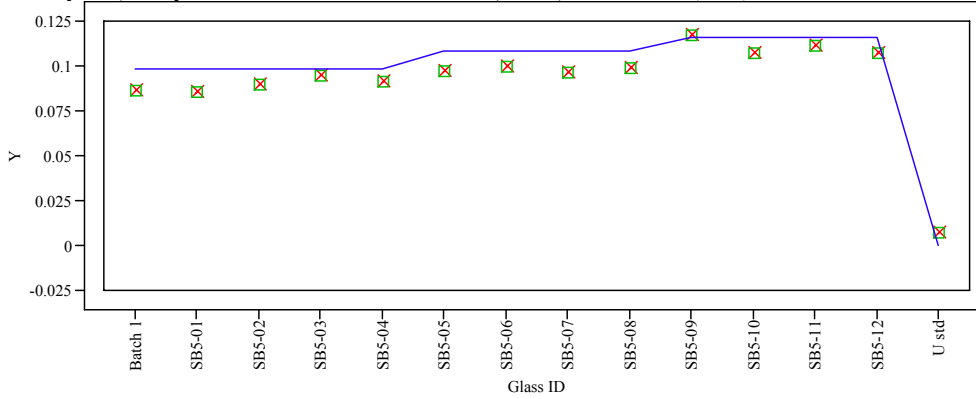
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=ZnO (wt%)



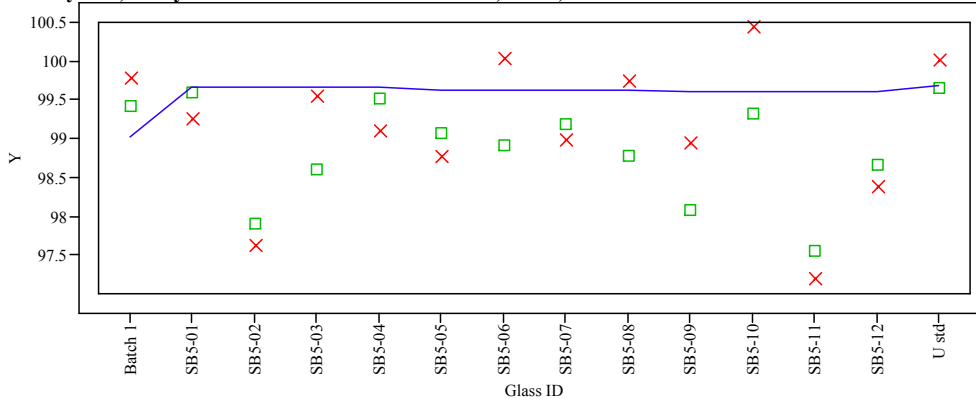
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

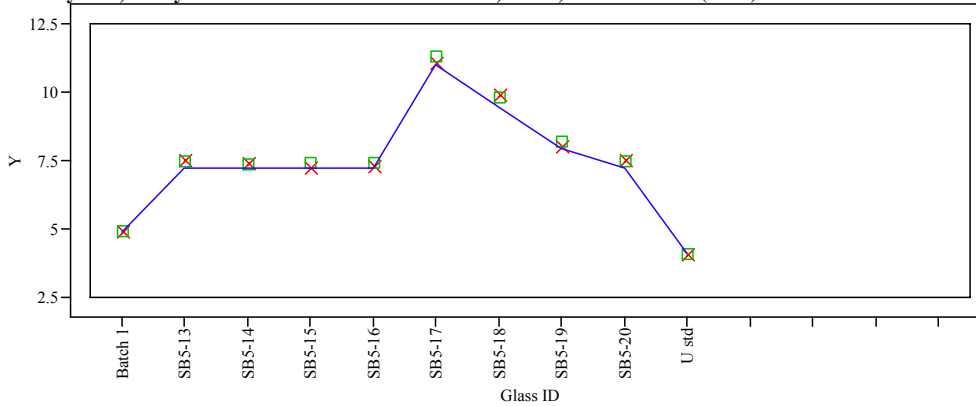
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide=ZrO2 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=2, Oxide= Sum of Oxides



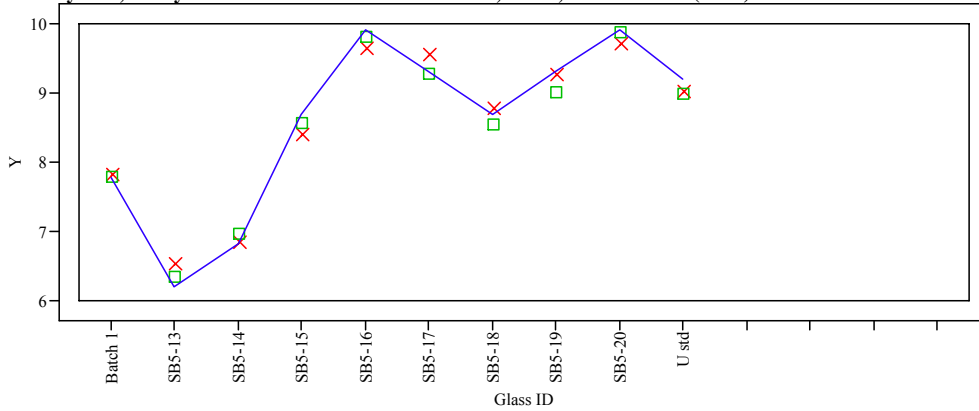
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Al2O3 (wt%)



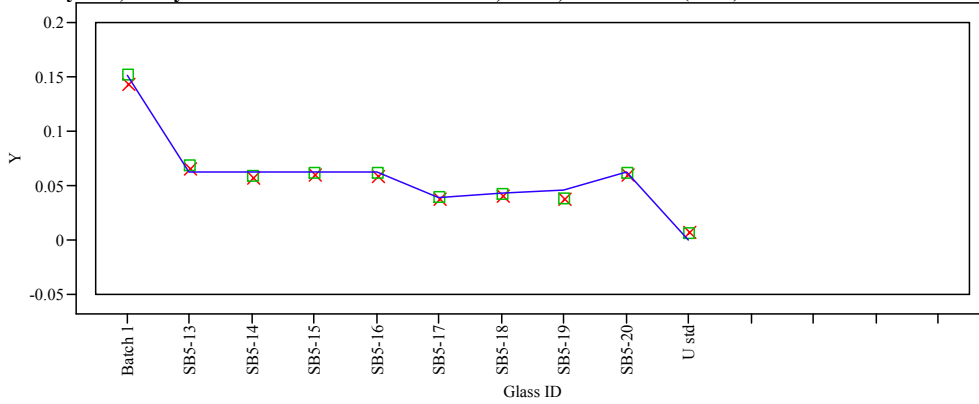
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

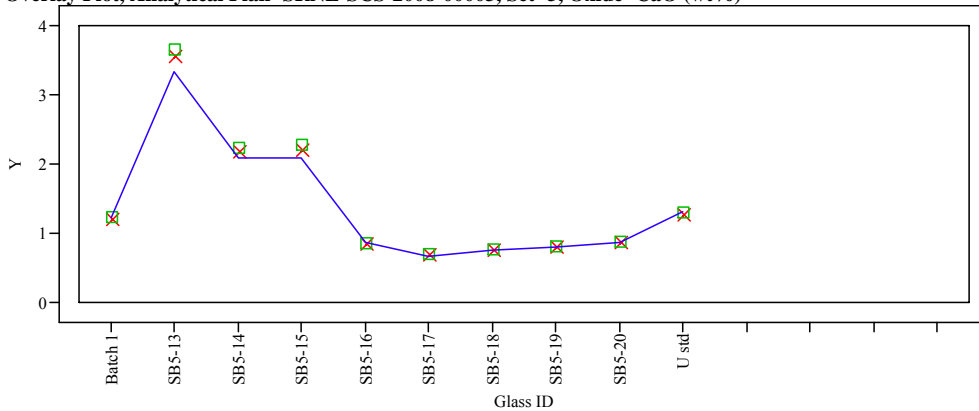
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=B2O3 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=BaO (wt%)



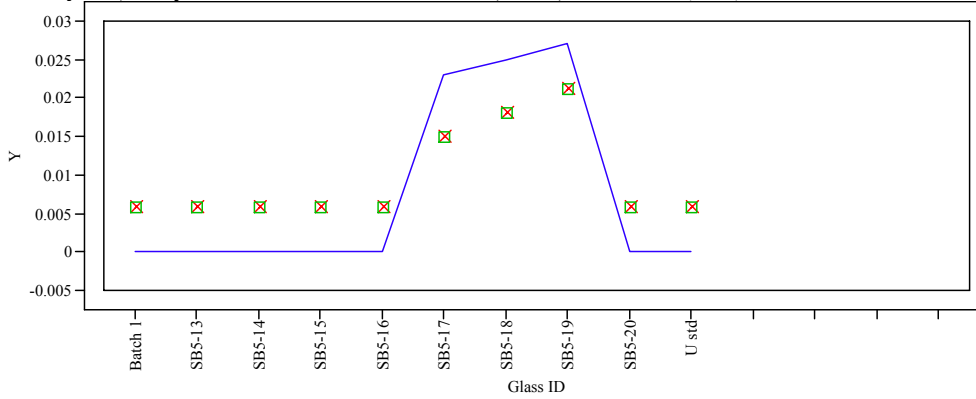
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=CaO (wt%)



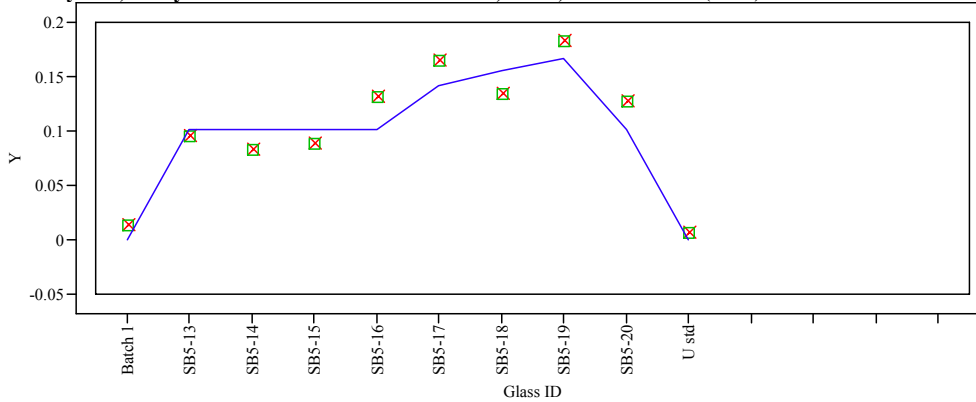
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

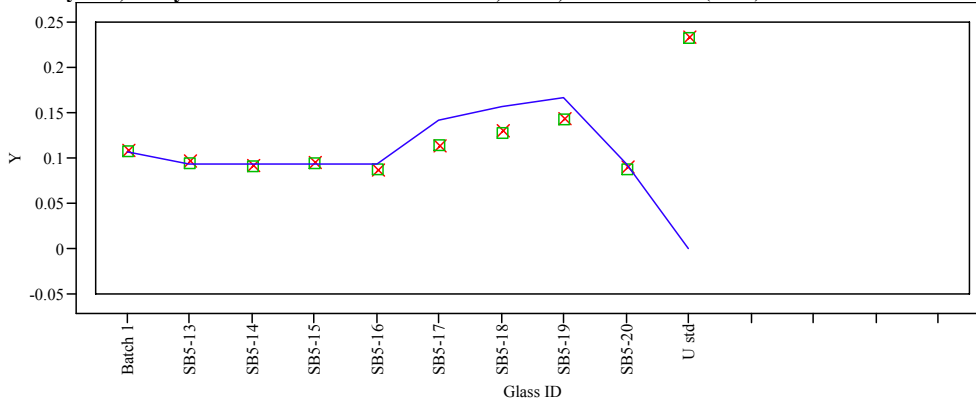
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=CdO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Ce2O3 (wt%)



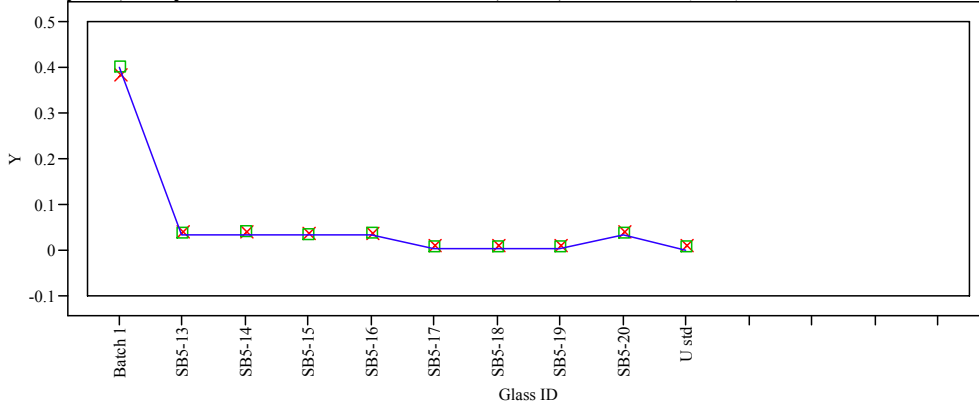
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Cr2O3 (wt%)



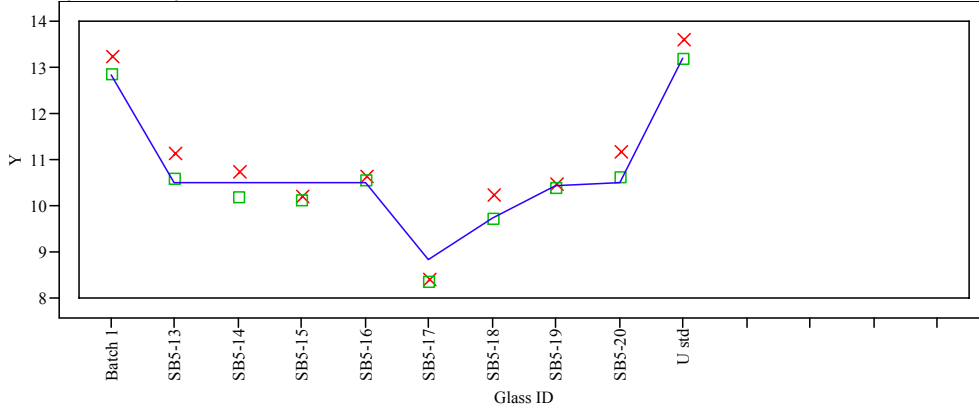
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

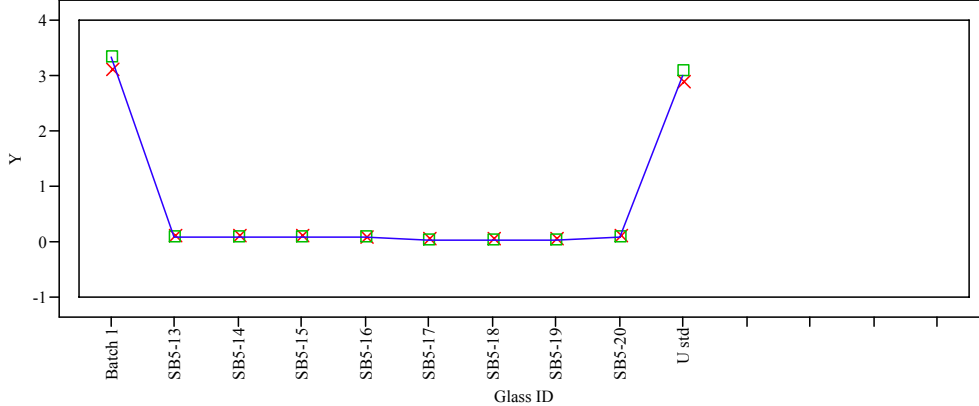
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=CuO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Fe2O3 (wt%)



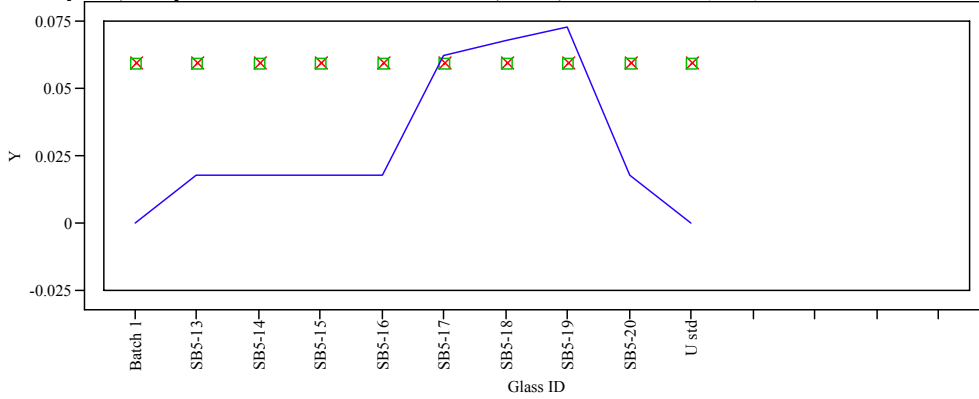
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=K2O (wt%)



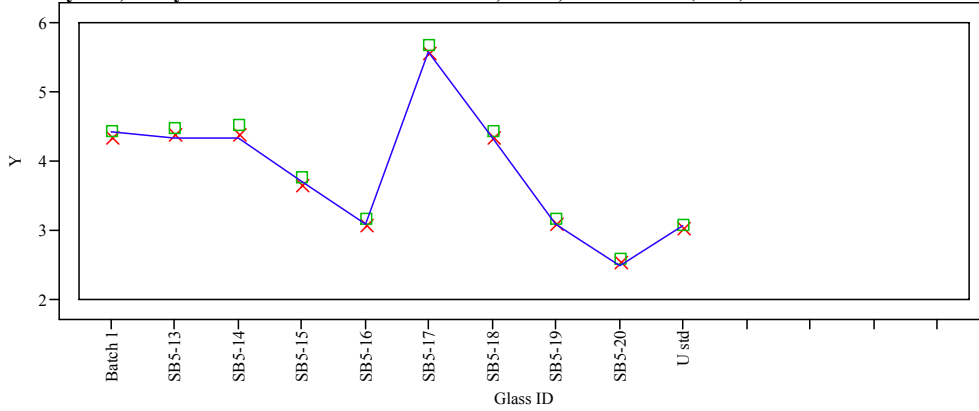
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

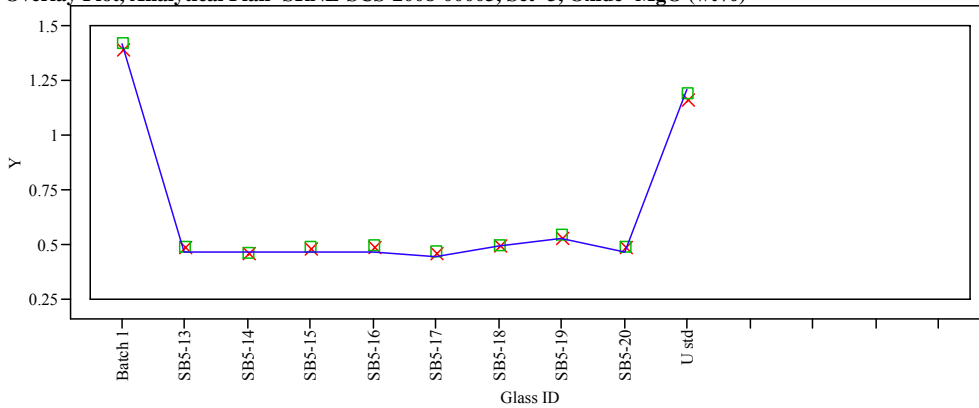
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=La2O3 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Li2O (wt%)



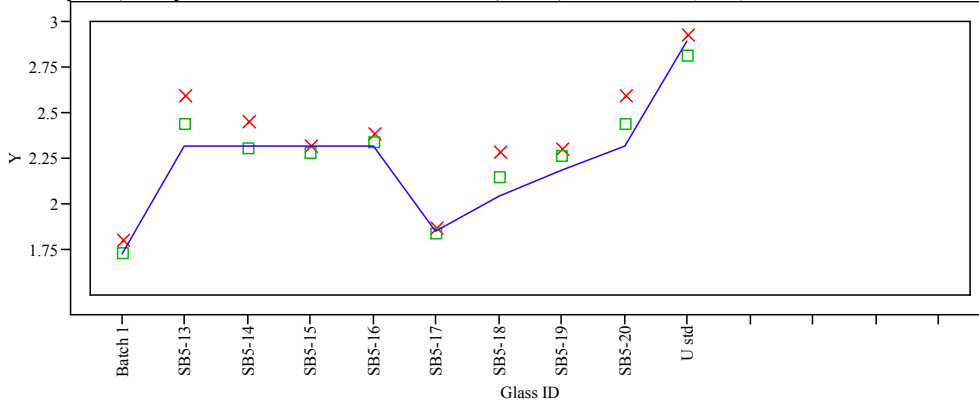
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=MgO (wt%)



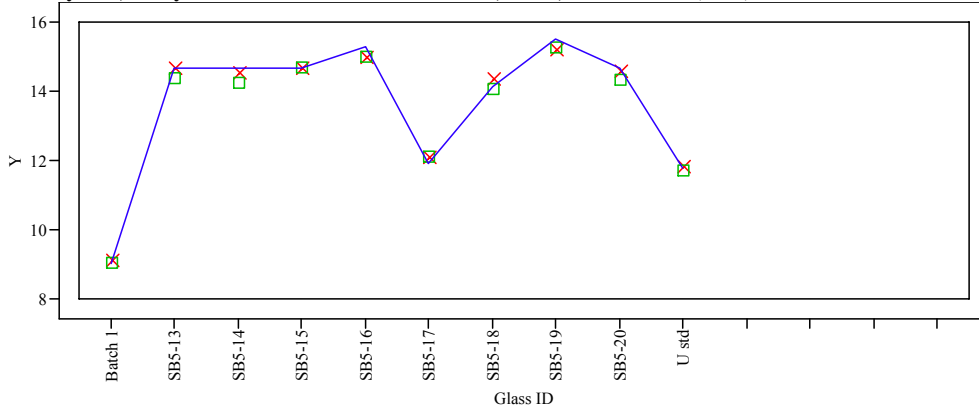
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

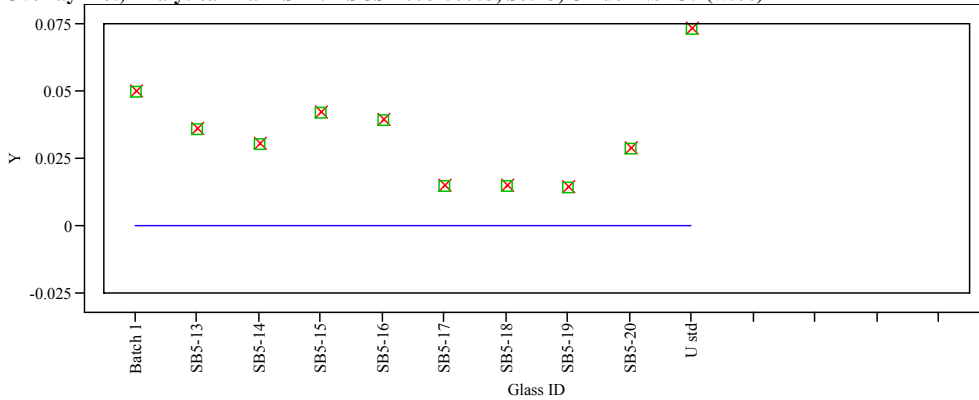
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=MnO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Na2O (wt%)



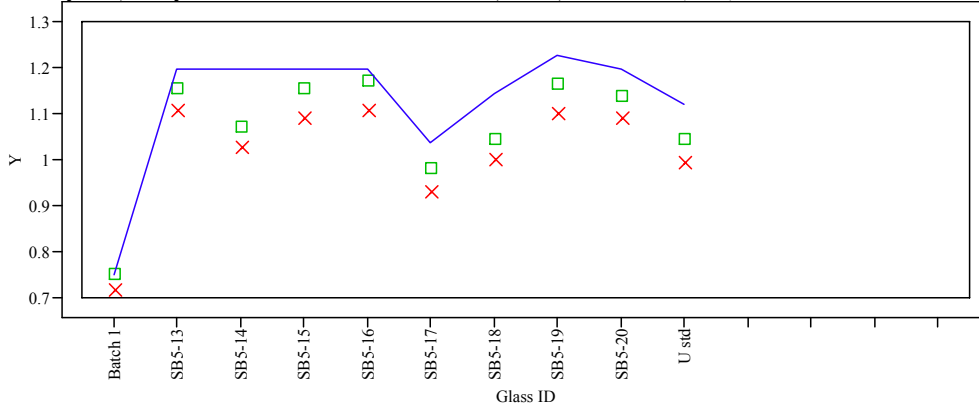
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=Nb2O5 (wt%)



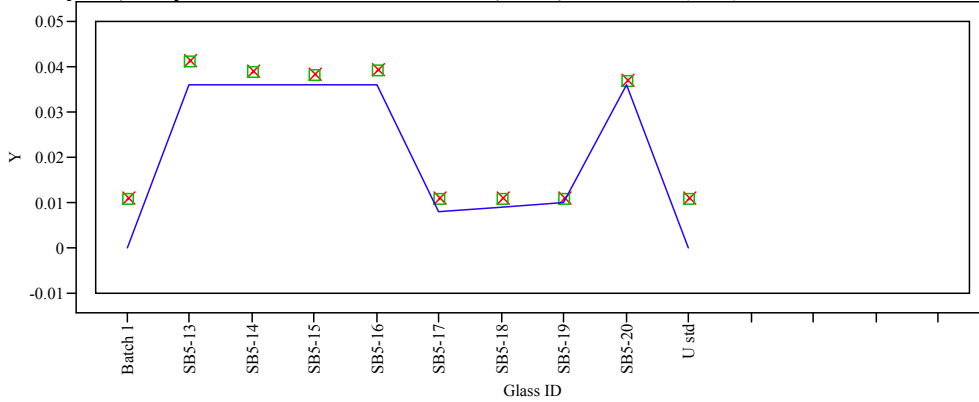
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

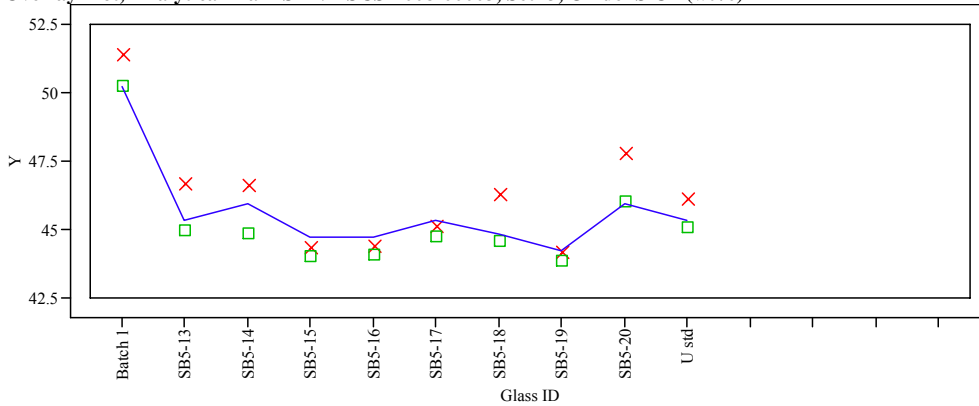
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=NiO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=PbO (wt%)



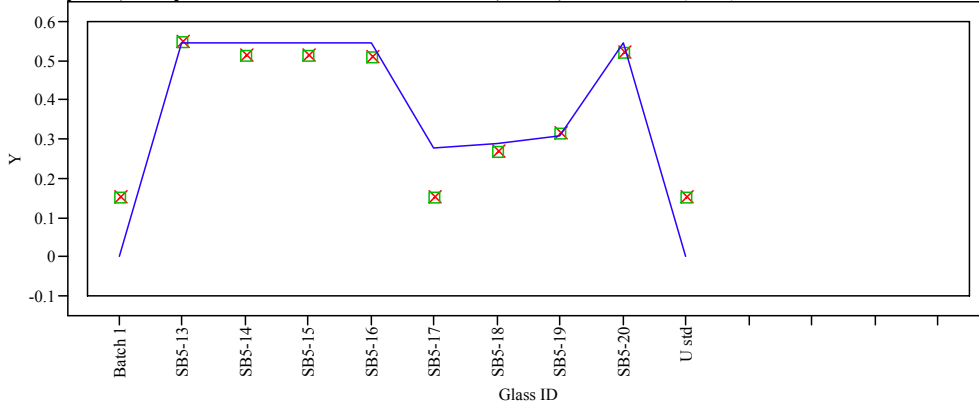
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=SiO2 (wt%)



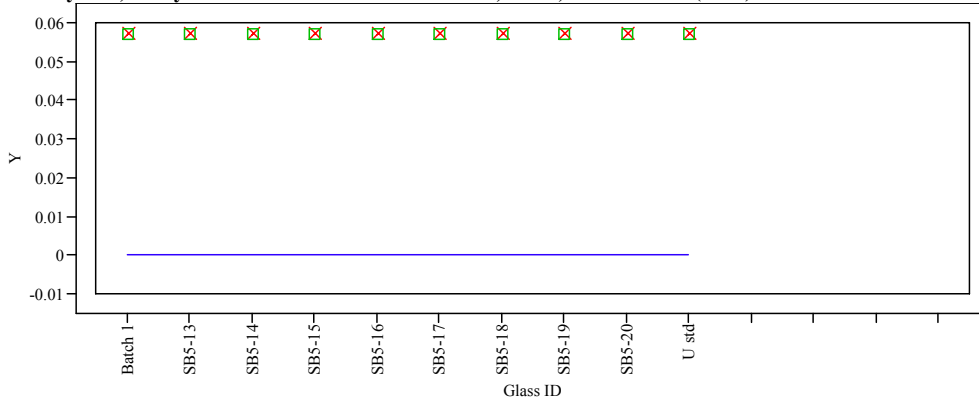
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

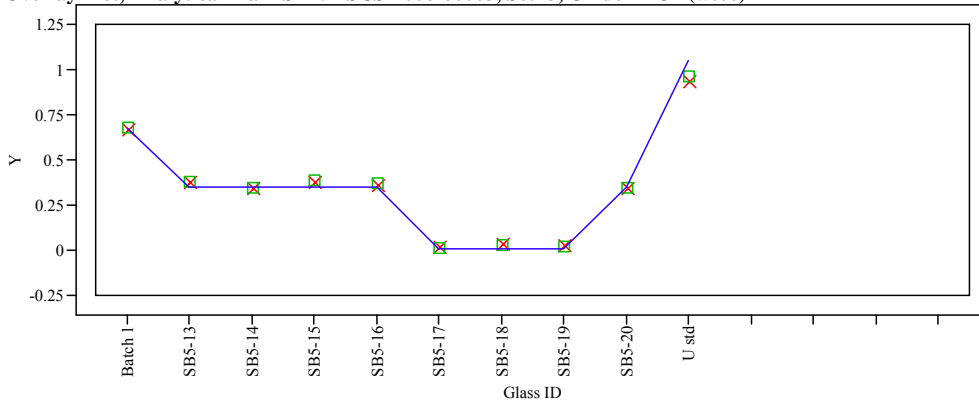
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=SO4 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=ThO2 (wt%)



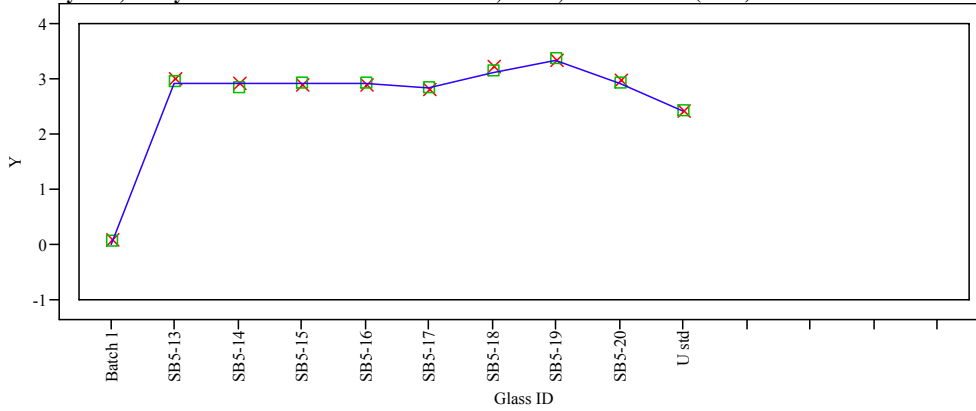
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=TiO2 (wt%)



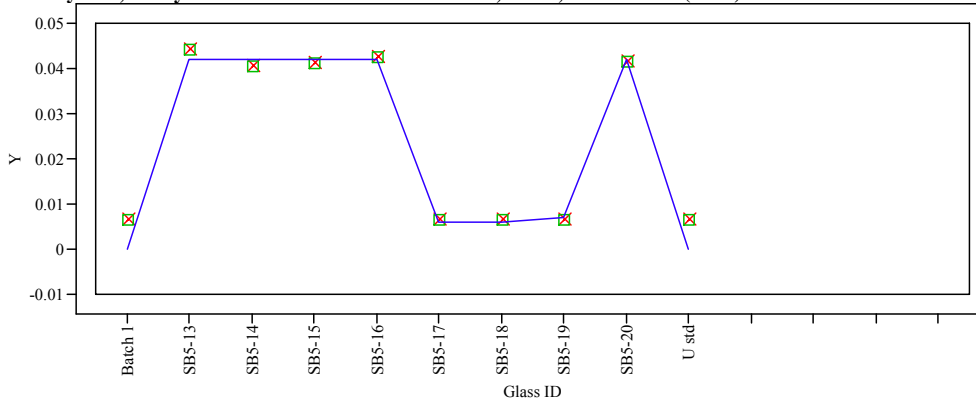
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

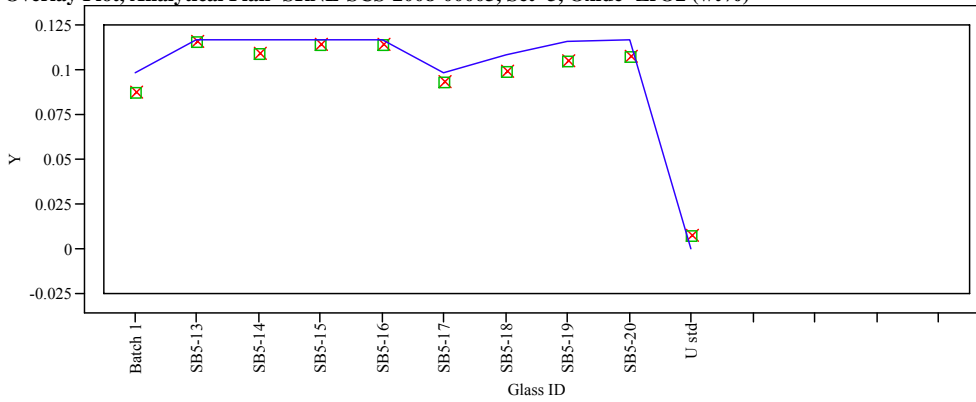
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=U3O8 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=ZnO (wt%)



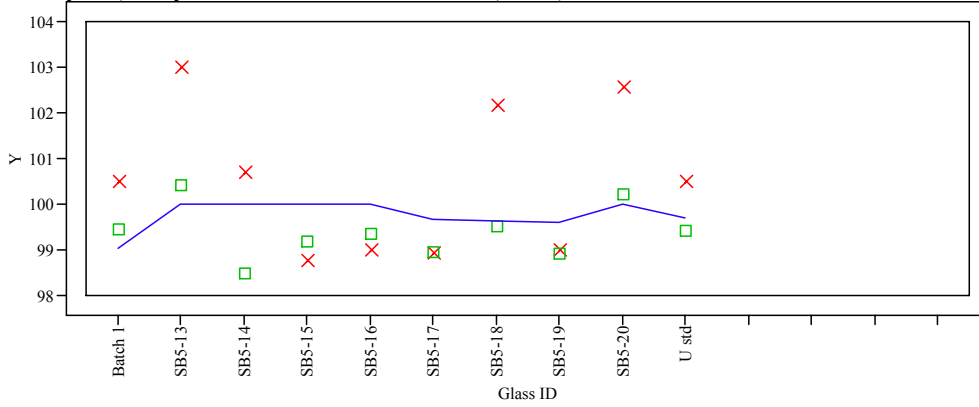
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide=ZrO2 (wt%)



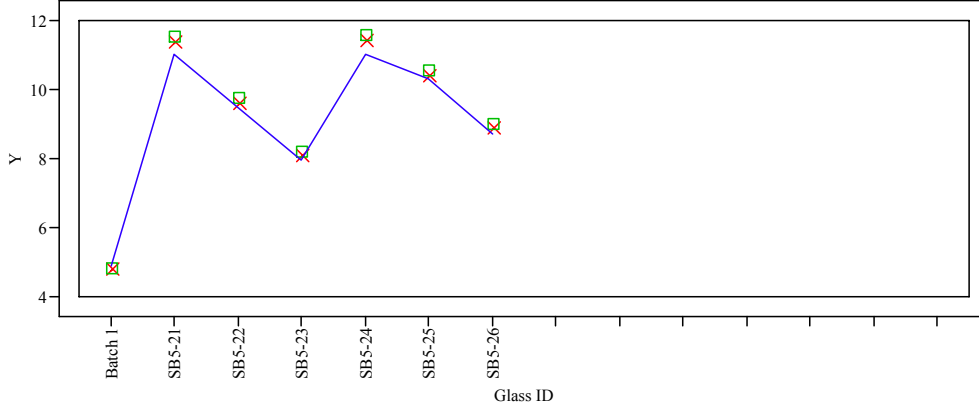
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

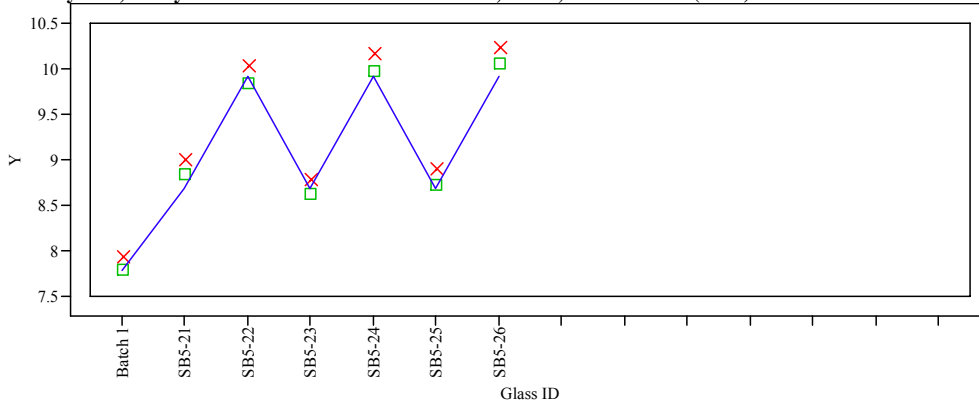
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00003, Set=3, Oxide= Sum of Oxides



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Al2O3 (wt%)



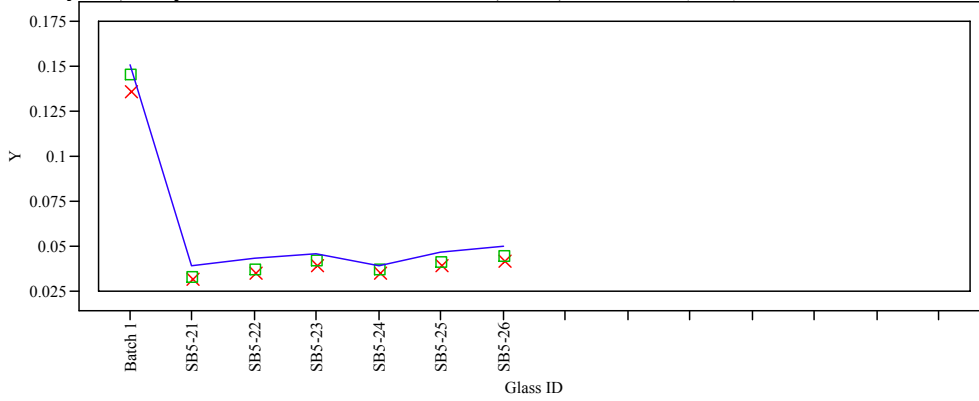
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=B2O3 (wt%)



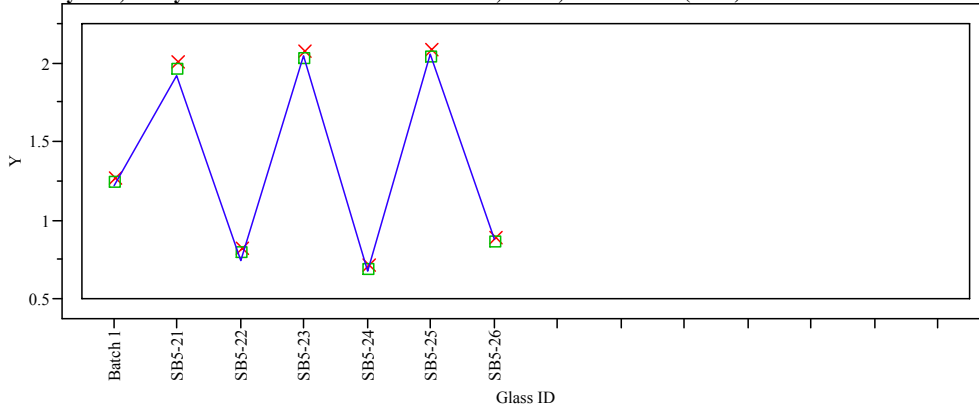
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

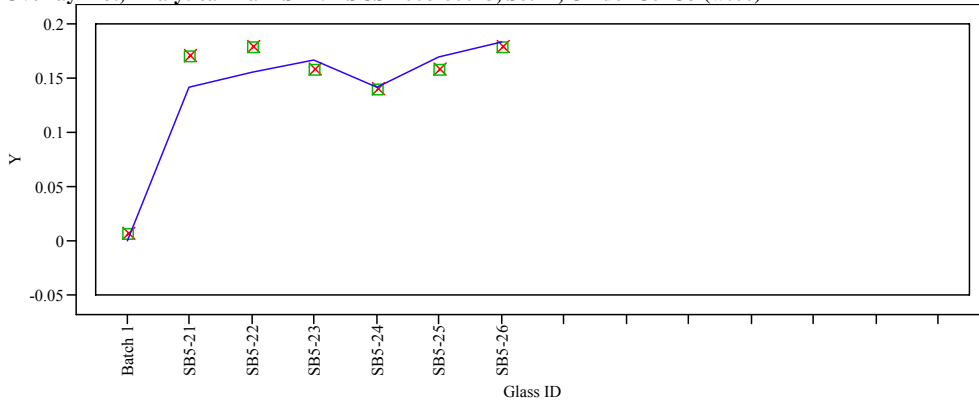
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=BaO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=CaO (wt%)



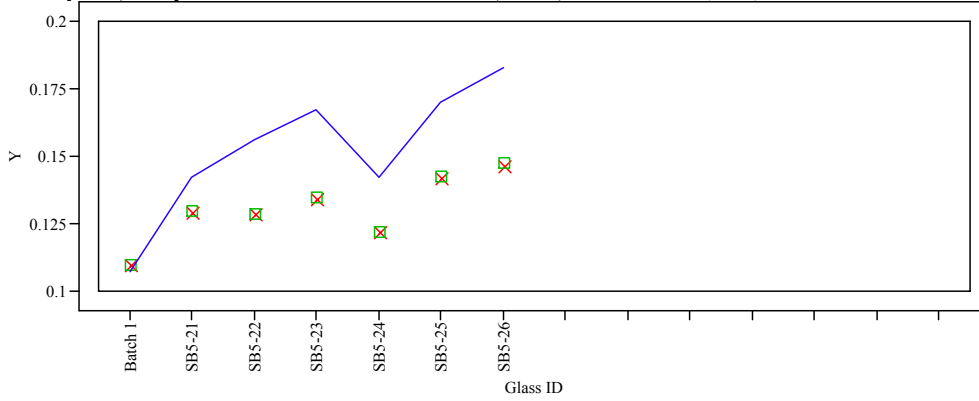
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Ce2O3 (wt%)



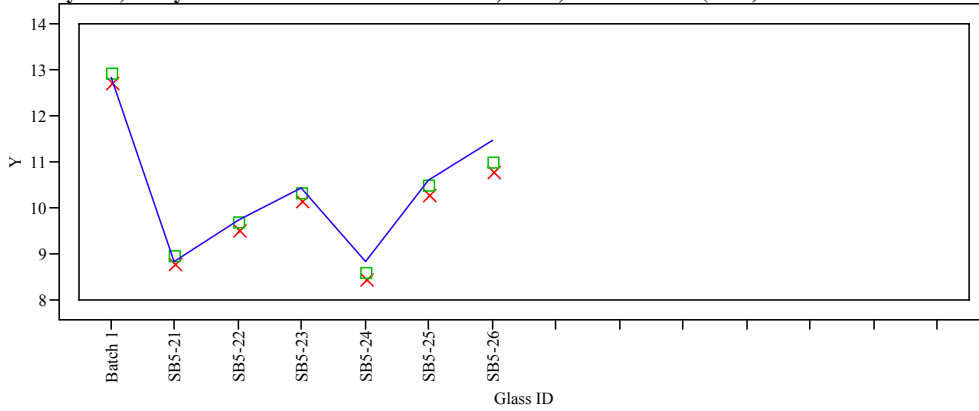
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

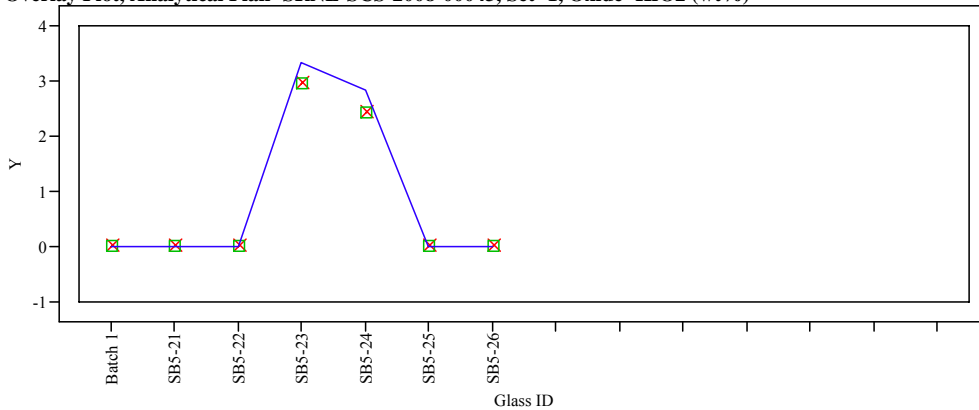
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Cr2O3 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Fe2O3 (wt%)



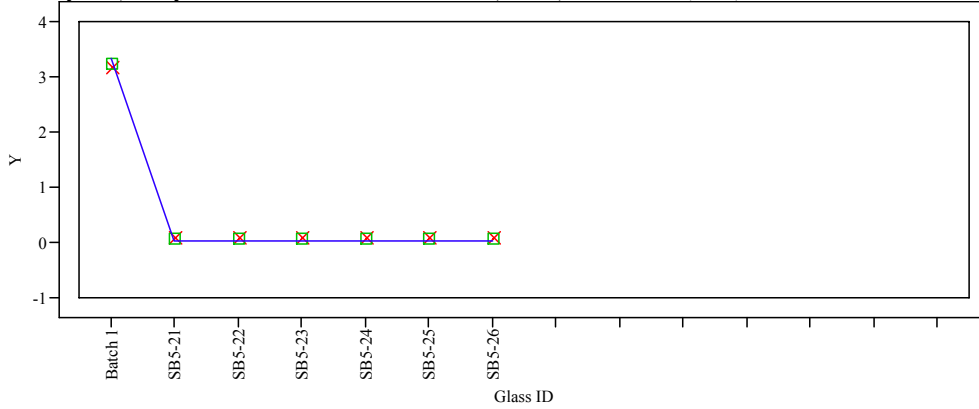
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=HfO2 (wt%)



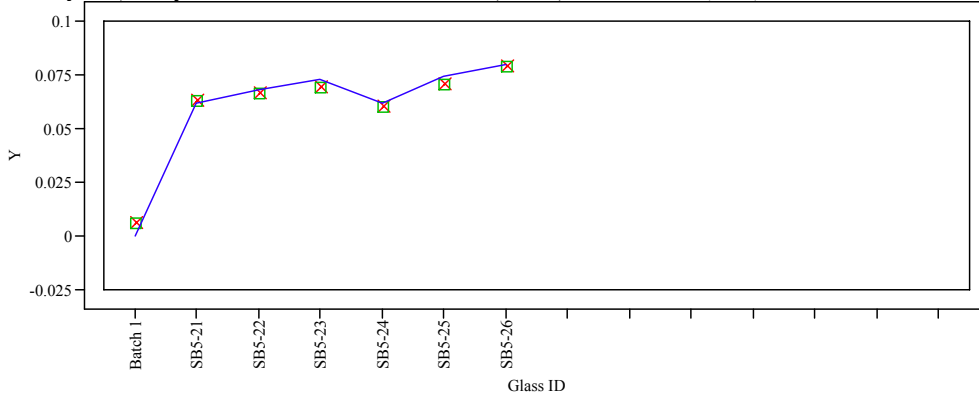
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

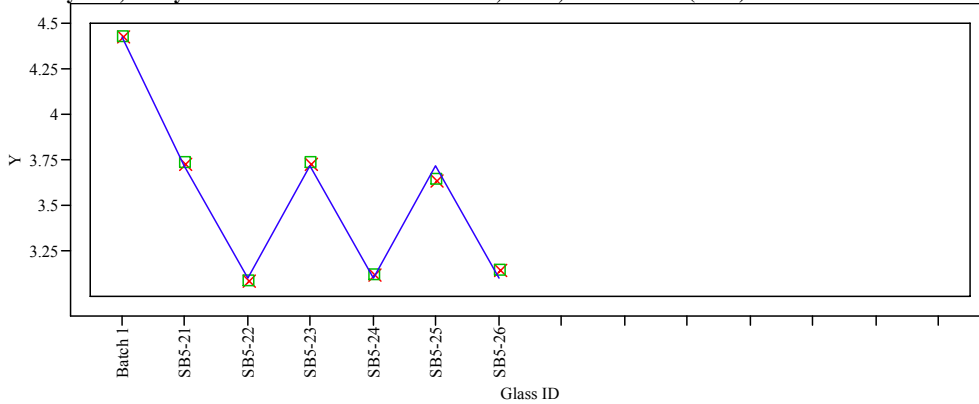
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=K2O (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=La2O3 (wt%)



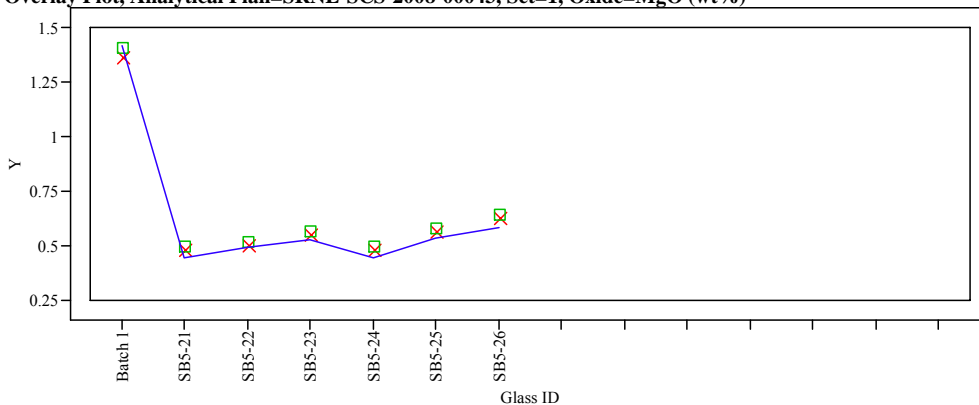
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Li2O (wt%)



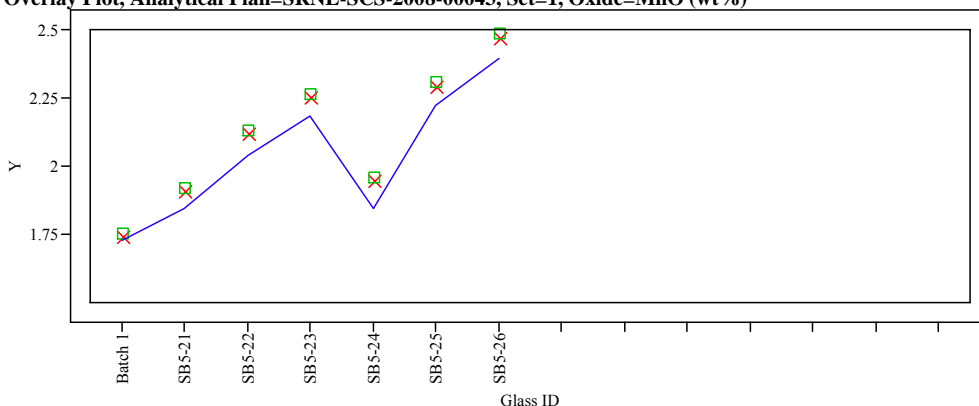
Y x Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

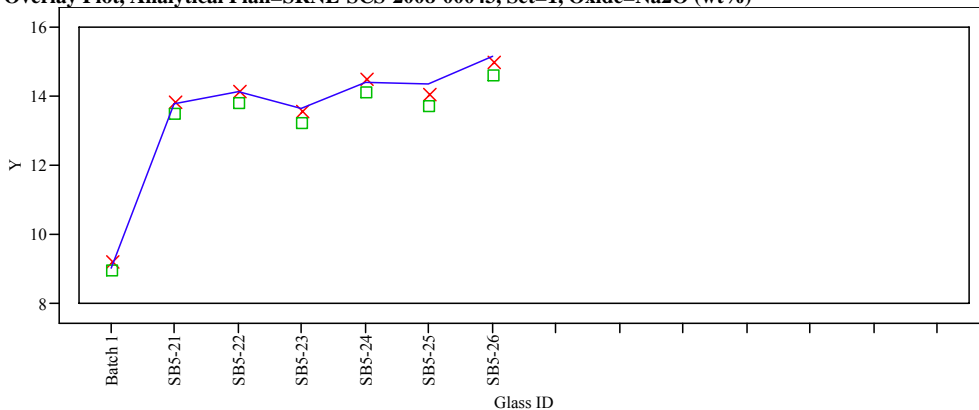
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=MgO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=MnO (wt%)



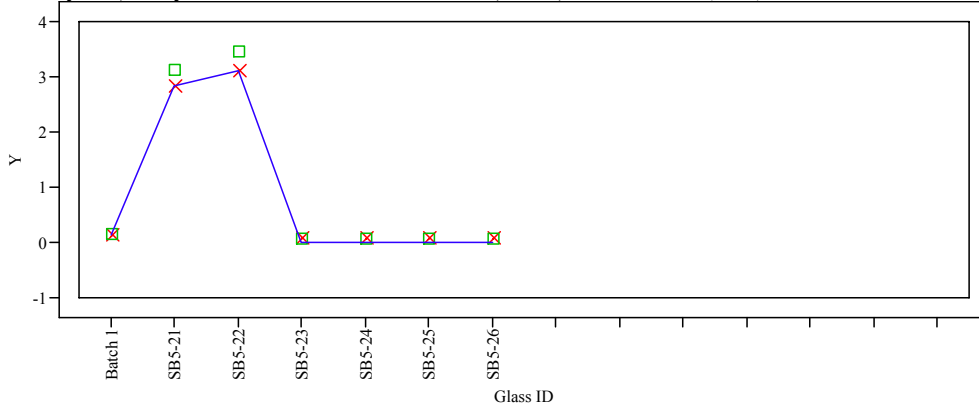
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Na2O (wt%)



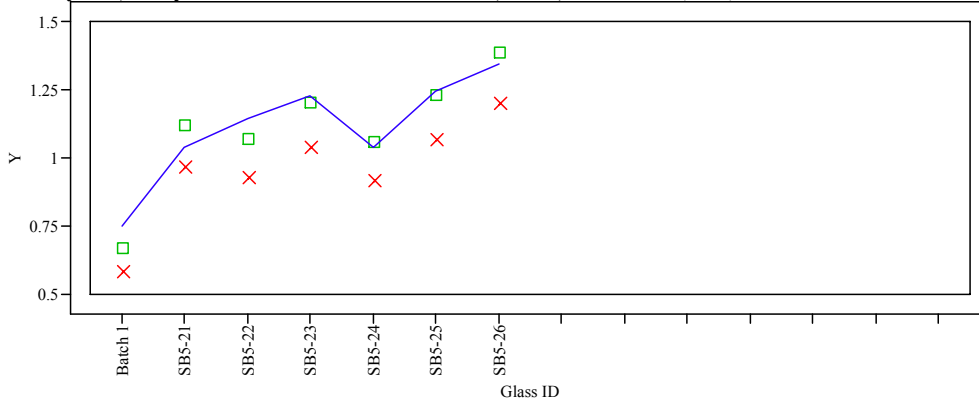
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

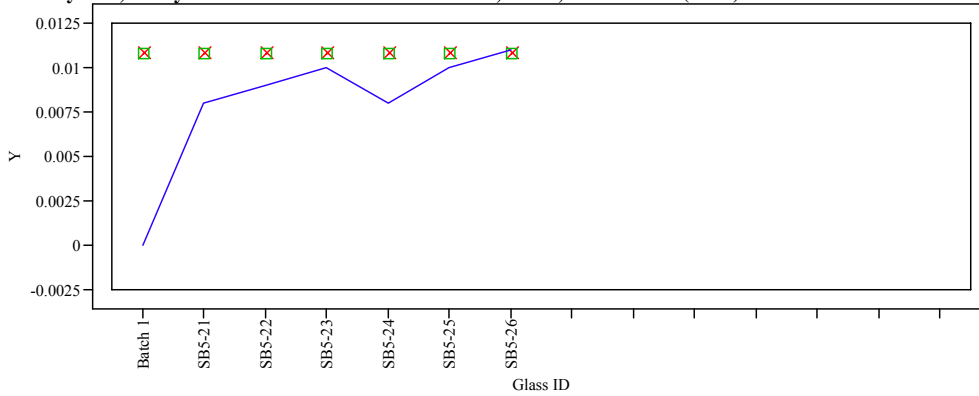
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Nd2O3 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=NiO (wt%)



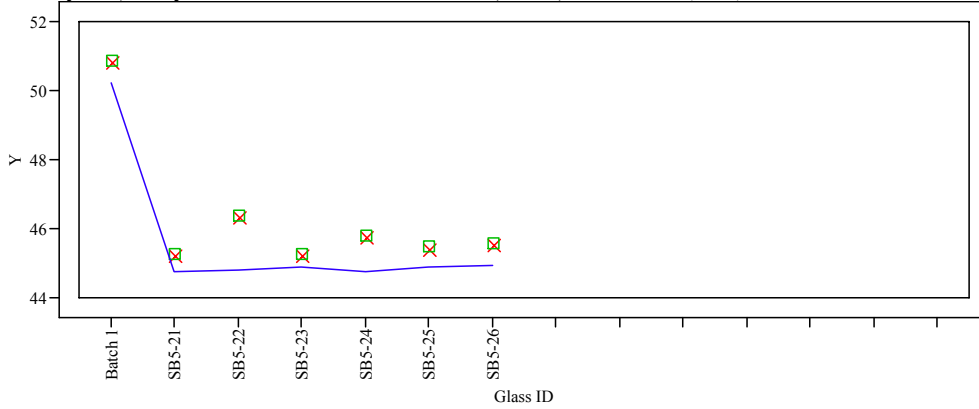
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=PbO (wt%)



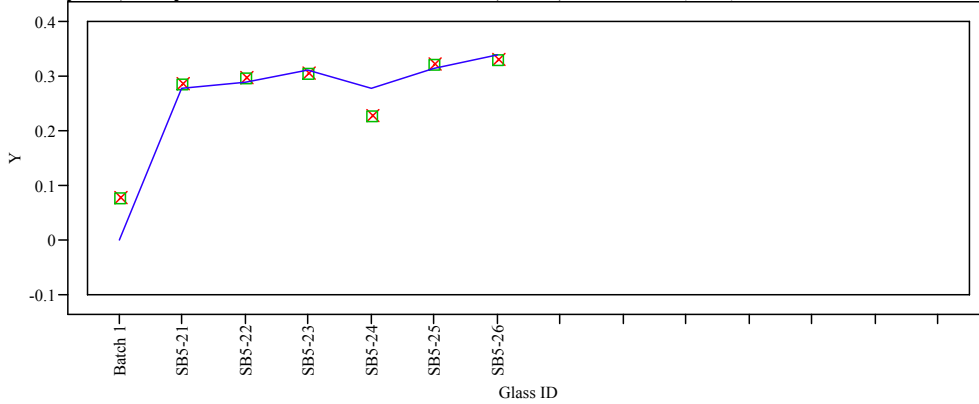
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

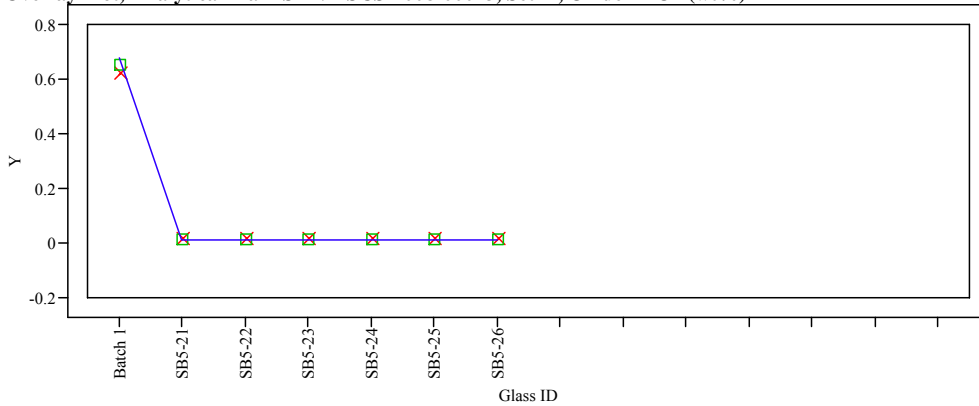
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=SiO2 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=SO4 (wt%)



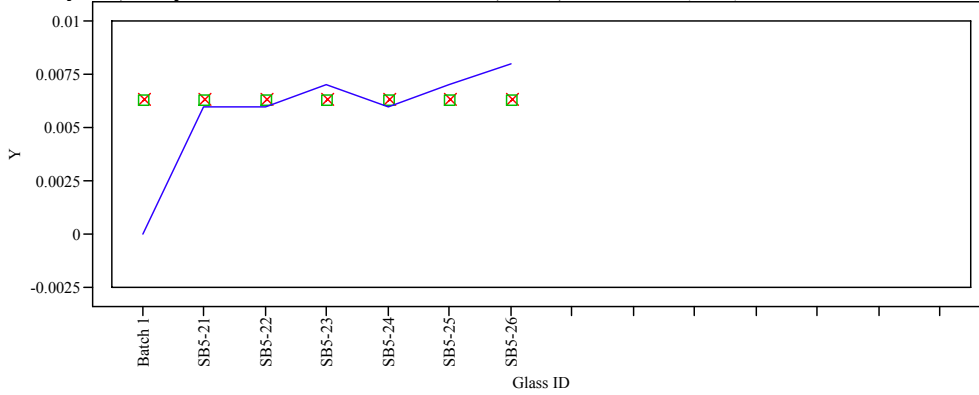
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=TiO2 (wt%)



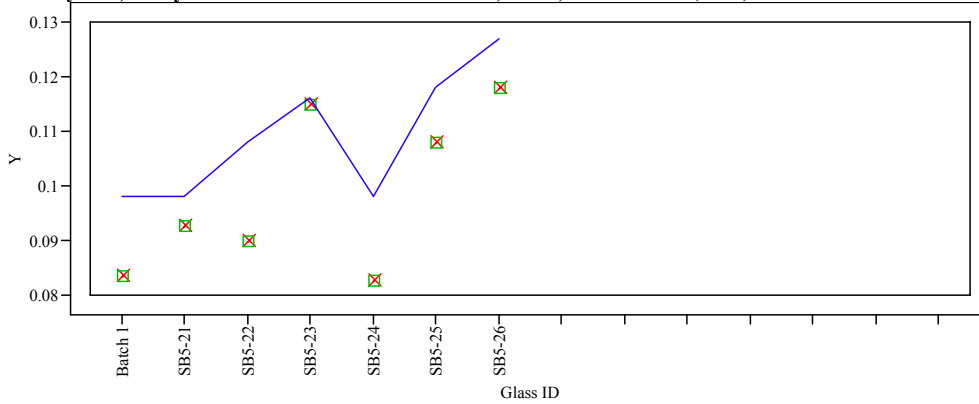
Y X Measured ■ Measured bc — Targeted

Exhibit A5. Measured, Measured bc, and Targeted Concentrations by Oxide by Glass ID for each Memo and Analytical Set. (continued)

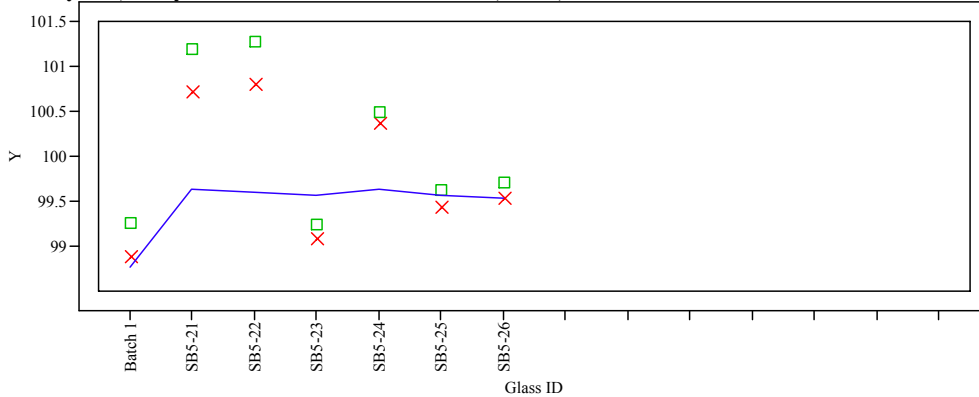
Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=ZnO (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=ZrO2 (wt%)



Overlay Plot, Analytical Plan=SRNL-SCS-2008-00043, Set=1, Oxide=Sum of Oxides



Y x Measured ■ Measured bc — Targeted

Appendix B

Tables and Exhibits Supporting the Analysis of the PCT Results

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments.**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	r	Soln Std	ref	1	1	STD-21-1	20.5	9.89	79.3	50.7	20.5	9.89	79.3	50.7
SRNL-SCS-2008-00005	r	EA	ref	1	2	R62	36.5	11	98.2	53.3	608.33455	183.3337	1636.6699	888.33511
SRNL-SCS-2008-00005	r	SB5-17	quenched	1	3	R55	11.9	11.3	34.1	59.4	19.83373	18.83371	56.83447	99.00198
SRNL-SCS-2008-00005	r	SB4VAR13	ccc	1	4	R09	23.8	17.9	65.9	71.6	39.66746	29.83393	109.83553	119.33572
SRNL-SCS-2008-00005	r	SB5-18	ccc	1	5	R38	11.7	8.53	45.8	58	19.50039	14.216951	76.33486	96.6686
SRNL-SCS-2008-00005	r	SB4VAR33	quenched	1	6	R77	12.5	10.3	44.9	57.5	20.83375	17.16701	74.83483	95.83525
SRNL-SCS-2008-00005	r	SB4VAR11	ccc	1	7	R06	12.2	10.6	35.2	61.1	20.33374	17.66702	58.66784	101.83537
SRNL-SCS-2008-00005	r	SB5-14	ccc	1	8	R49	11.1	10.5	60.5	68.5	18.50037	17.50035	100.83535	114.16895
SRNL-SCS-2008-00005	r	SB5-17	ccc	1	9	R45	11.3	10.5	32	58.4	18.83371	17.50035	53.3344	97.33528
SRNL-SCS-2008-00005	r	SB4VAR33	ccc	1	10	R84	13.1	10.7	43.6	59.1	21.83377	17.83369	72.66812	98.50197
SRNL-SCS-2008-00005	r	SB5-20	ccc	1	11	R26	11.7	4.55	39	49.9	19.50039	7.583485	65.0013	83.16833
SRNL-SCS-2008-00005	r	SB4VAR32	quenched	1	12	R52	12.3	10.4	37.7	59.9	20.50041	17.33368	62.83459	99.83533
SRNL-SCS-2008-00005	r	SB5-16	quenched	1	13	R68	15	6.42	55.3	56.2	25.0005	10.700214	92.16851	93.66854
SRNL-SCS-2008-00005	r	ARM-1	ref	1	14	R17	10.2	8.03	21.1	36	17.00034	13.383601	35.16737	60.0012
SRNL-SCS-2008-00005	r	SB5-15	quenched	1	15	R69	13.3	8.12	58.9	59.2	22.16711	13.533604	98.16863	98.66864
SRNL-SCS-2008-00005	r	Soln Std	ref	1	16	STD-21-2	19.8	9.69	79.1	49.4	19.8	9.69	79.1	49.4
SRNL-SCS-2008-00005	r	SB5-16	ccc	1	17	R61	13.8	5.94	48.2	54.4	23.00046	9.900198	80.33494	90.66848
SRNL-SCS-2008-00005	r	SB4VAR12	quenched	1	18	R85	12.9	10.5	41.5	59.1	21.50043	17.50035	69.16805	98.50197
SRNL-SCS-2008-00005	r	SB5-15	ccc	1	19	R78	12.8	7.93	51.6	57.3	21.33376	13.216931	86.00172	95.50191
SRNL-SCS-2008-00005	r	SB4VAR13	quenched	1	20	R57	13.3	10.5	48.7	56.6	22.16711	17.50035	81.16829	94.33522
SRNL-SCS-2008-00005	r	SB5-20	quenched	1	21	R31	11.8	4.44	41.1	48.3	19.66706	7.400148	68.50137	80.50161
SRNL-SCS-2008-00005	r	SB4VAR31	quenched	1	22	R30	12.4	10.9	34.3	61.2	20.66708	18.16703	57.16781	102.00204
SRNL-SCS-2008-00005	r	blank	ref	1	23	R08	<1.00	<1.00	<1.00	0.116	0.83335	0.83335	0.83335	0.1933372
SRNL-SCS-2008-00005	r	SB4VAR12	ccc	1	24	R46	12.2	10.3	46.2	57.7	20.33374	17.16701	77.00154	96.16859
SRNL-SCS-2008-00005	r	SB5-18	quenched	1	25	R48	11.7	8.35	46.7	57.4	19.50039	13.916945	77.83489	95.66858
SRNL-SCS-2008-00005	r	SB4VAR11	quenched	1	26	R01	12.7	10.7	36.9	62	21.16709	17.83369	61.50123	103.3354
SRNL-SCS-2008-00005	r	SB4VAR31	ccc	1	27	R59	12.4	11.1	34.3	62.2	20.66708	18.50037	57.16781	103.66874

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	r	SB5-19	quenched	1	28	R65	12.3	5.63	51.5	52.8	20.50041	9.383521	85.83505	88.00176
SRNL-SCS-2008-00005	r	SB4VAR32	ccc	1	29	R02	12	10.4	38.4	58.4	20.0004	17.33368	64.00128	97.33528
SRNL-SCS-2008-00005	r	SB5-19	ccc	1	30	R37	11.9	5.66	49.7	51.8	19.83373	9.433522	82.83499	86.33506
SRNL-SCS-2008-00005	r	SB5-14	quenched	1	31	R53	11.1	10.2	64.4	67.8	18.50037	17.00034	107.33548	113.00226
SRNL-SCS-2008-00005	r	Soln Std	ref	1	32	STD-21-3	20.1	9.82	79.4	49.9	20.1	9.82	79.4	49.9
SRNL-SCS-2008-00005	r	Soln Std	ref	2	1	STD-22-1	20.1	9.63	78.7	50.8	20.1	9.63	78.7	50.8
SRNL-SCS-2008-00005	r	SB5-17	ccc	2	2	R83	10.8	10.4	31.5	58.1	18.00036	17.33368	52.50105	96.83527
SRNL-SCS-2008-00005	r	SB4VAR11	ccc	2	3	R03	11.4	10	34.1	59.3	19.00038	16.667	56.83447	98.83531
SRNL-SCS-2008-00005	r	SB5-15	quenched	2	4	R20	12.3	7.6	56.8	56.8	20.50041	12.66692	94.66856	94.66856
SRNL-SCS-2008-00005	r	SB5-14	quenched	2	5	R54	10.1	9.53	61.3	65	16.83367	15.883651	102.16871	108.3355
SRNL-SCS-2008-00005	r	SB4VAR11	quenched	2	6	R13	11	9.73	35.4	57.9	18.3337	16.216991	59.00118	96.50193
SRNL-SCS-2008-00005	r	SB5-15	ccc	2	7	R80	11.4	7.42	52.8	55.1	19.00038	12.366914	88.00176	91.83517
SRNL-SCS-2008-00005	r	SB4VAR13	ccc	2	8	R47	21.5	16.5	62.3	65.8	35.83405	27.50055	103.83541	109.66886
SRNL-SCS-2008-00005	r	SB4VAR12	quenched	2	9	R82	11.7	10	41.3	58.1	19.50039	16.667	68.83471	96.83527
SRNL-SCS-2008-00005	r	SB5-18	quenched	2	10	R66	10.4	7.51	44.6	54.6	17.33368	12.516917	74.33482	91.00182
SRNL-SCS-2008-00005	r	SB4VAR12	ccc	2	11	R32	11.7	10.1	39.7	59	19.50039	16.83367	66.16799	98.3353
SRNL-SCS-2008-00005	r	SB4VAR13	quenched	2	12	R40	12.2	10	48.9	56.2	20.33374	16.667	81.50163	93.66854
SRNL-SCS-2008-00005	r	SB4VAR33	ccc	2	13	R74	12	10.2	53.4	56.9	20.0004	17.00034	89.00178	94.83523
SRNL-SCS-2008-00005	r	SB5-19	ccc	2	14	R50	11.2	5.38	48.9	52.3	18.66704	8.966846	81.50163	87.16841
SRNL-SCS-2008-00005	r	SB5-17	quenched	2	15	R27	11.1	11	34.3	60.2	18.50037	18.3337	57.16781	100.33534
SRNL-SCS-2008-00005	r	Soln Std	ref	2	16	STD-22-2	19.6	9.64	80.1	50.9	19.6	9.64	80.1	50.9
SRNL-SCS-2008-00005	r	SB5-14	ccc	2	17	R81	10.4	10.1	60.5	68.1	17.33368	16.83367	100.83535	113.50227
SRNL-SCS-2008-00005	r	SB4VAR33	quenched	2	18	R42	12.2	10.1	44.7	58.1	20.33374	16.83367	74.50149	96.83527
SRNL-SCS-2008-00005	r	ARM-1	ref	2	19	R25	9.64	7.65	20.5	35.6	16.066988	12.750255	34.16735	59.33452
SRNL-SCS-2008-00005	r	SB5-16	ccc	2	20	R35	12.4	5.52	47.9	52.6	20.66708	9.200184	79.83493	87.66842
SRNL-SCS-2008-00005	r	SB5-19	quenched	2	21	R41	12.2	5.6	52.9	53.6	20.33374	9.33352	88.16843	89.33512
SRNL-SCS-2008-00005	r	SB5-20	ccc	2	22	R19	11.1	4.34	40.6	49.6	18.50037	7.233478	67.66802	82.66832
SRNL-SCS-2008-00005	r	EA	ref	2	23	R51	36.6	10.7	98.6	53.8	610.00122	178.33369	1643.3366	896.66846

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	r	SB4VAR32	quenched	2	24	R36	11.9	10.2	38.8	60.9	19.83373	17.00034	64.66796	101.50203
SRNL-SCS-2008-00005	r	SB5-20	quenched	2	25	R11	11.7	4.3	41.1	51.1	19.50039	7.16681	68.50137	85.16837
SRNL-SCS-2008-00005	r	SB4VAR32	ccc	2	26	R34	12.5	10.5	37.8	62.7	20.83375	17.50035	63.00126	104.50209
SRNL-SCS-2008-00005	r	SB4VAR31	quenched	2	27	R24	12.3	10.8	34.1	63.4	20.50041	18.00036	56.83447	105.66878
SRNL-SCS-2008-00005	r	SB5-18	ccc	2	28	R12	11.5	8.4	46.1	59.9	19.16705	14.00028	76.83487	99.83533
SRNL-SCS-2008-00005	r	SB4VAR31	ccc	2	29	R72	11.7	10.4	34.1	62.4	19.50039	17.33368	56.83447	104.00208
SRNL-SCS-2008-00005	r	SB5-16	quenched	2	30	R70	14.8	6.11	55.1	57.2	24.66716	10.183537	91.83517	95.33524
SRNL-SCS-2008-00005	r	Soln Std	ref	2	31	STD-22-3	21.5	10.1	81.5	54.3	21.5	10.1	81.5	54.3
SRNL-SCS-2008-00005	r	Soln Std	ref	3	1	STD-23-1	20.8	9.7	79.1	49.9	20.8	9.7	79.1	49.9
SRNL-SCS-2008-00005	r	SB4VAR32	ccc	3	2	R73	12.5	10.7	40.2	60.4	20.83375	17.83369	67.00134	100.66868
SRNL-SCS-2008-00005	r	SB5-17	quenched	3	3	R60	11.1	10.1	31.8	54.8	18.50037	16.83367	53.00106	91.33516
SRNL-SCS-2008-00005	r	SB4VAR12	ccc	3	4	R23	11.9	10	40.1	56.6	19.83373	16.667	66.83467	94.33522
SRNL-SCS-2008-00005	r	SB4VAR11	ccc	3	5	R15	11.8	10	34.2	59.2	19.66706	16.667	57.00114	98.66864
SRNL-SCS-2008-00005	r	SB4VAR31	ccc	3	6	R58	11.9	10.3	32.7	60.5	19.83373	17.16701	54.50109	100.83535
SRNL-SCS-2008-00005	r	SB5-19	ccc	3	7	R76	12.5	5.46	48.4	54.5	20.83375	9.100182	80.66828	90.83515
SRNL-SCS-2008-00005	r	SB5-14	quenched	3	8	R79	11.5	10	63.7	70.2	19.16705	16.667	106.16879	117.00234
SRNL-SCS-2008-00005	r	SB4VAR33	ccc	3	9	R63	13.7	10.8	45.1	60.6	22.83379	18.00036	75.16817	101.00202
SRNL-SCS-2008-00005	r	SB4VAR32	quenched	3	10	R67	12.5	10.1	37.5	59.4	20.83375	16.83367	62.50125	99.00198
SRNL-SCS-2008-00005	r	EA	ref	3	11	R64	36.9	10.7	91.3	55	615.00123	178.33369	1521.6697	916.6685
SRNL-SCS-2008-00005	r	SB5-20	ccc	3	12	R22	12.6	4.39	40.2	51.4	21.00042	7.316813	67.00134	85.66838
SRNL-SCS-2008-00005	r	SB4VAR12	quenched	3	13	R44	13.6	10.6	43.9	63.3	22.66712	17.66702	73.16813	105.50211
SRNL-SCS-2008-00005	r	SB5-17	ccc	3	14	R07	12.6	11.2	33	64.2	21.00042	18.66704	55.0011	107.00214
SRNL-SCS-2008-00005	r	SB4VAR13	ccc	3	15	R28	25	18.1	64.6	73.7	41.6675	30.16727	107.66882	122.83579
SRNL-SCS-2008-00005	r	Soln Std	ref	3	16	STD-23-2	22	10.1	80	54.6	22	10.1	80	54.6
SRNL-SCS-2008-00005	r	SB4VAR11	quenched	3	17	R33	12.8	10.4	37.1	58.9	21.33376	17.33368	61.83457	98.16863
SRNL-SCS-2008-00005	r	SB4VAR31	quenched	3	18	R04	14.2	11.2	36.4	67.2	23.66714	18.66704	60.66788	112.00224
SRNL-SCS-2008-00005	r	SB5-19	quenched	3	19	R86	14	6	56	57.2	23.3338	10.0002	93.3352	95.33524
SRNL-SCS-2008-00005	r	SB4VAR13	quenched	3	20	R10	12.3	10.4	50.9	52.6	20.50041	17.33368	84.83503	87.66842

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	r	SB5-15	ccc	3	21	R16	11.4	7.68	55.1	51.2	19.00038	12.800256	91.83517	85.33504
SRNL-SCS-2008-00005	r	SB5-14	ccc	3	22	R71	9.94	10.2	62.5	60.3	16.566998	17.00034	104.16875	100.50201
SRNL-SCS-2008-00005	r	SB5-20	quenched	3	23	R56	11.3	4.29	42.3	46.7	18.83371	7.150143	70.50141	77.83489
SRNL-SCS-2008-00005	r	SB5-16	quenched	3	24	R75	13.8	6.17	58	53.3	23.00046	10.283539	96.6686	88.83511
SRNL-SCS-2008-00005	r	blank	ref	3	25	R39	<1.00	<1.00	<1.00	0.456	0.83335	0.83335	0.83335	0.7600152
SRNL-SCS-2008-00005	r	SB5-18	quenched	3	26	R21	10.9	8.22	49.7	53.5	18.16703	13.700274	82.83499	89.16845
SRNL-SCS-2008-00005	r	SB4VAR33	quenched	3	27	R18	12.3	10.7	48.4	57	20.50041	17.83369	80.66828	95.0019
SRNL-SCS-2008-00005	r	ARM-1	ref	3	28	R29	10.1	8.25	23.2	35	16.83367	13.750275	38.66744	58.3345
SRNL-SCS-2008-00005	r	SB5-16	ccc	3	29	R14	13.7	6.3	55.1	53.2	22.83379	10.50021	91.83517	88.66844
SRNL-SCS-2008-00005	r	SB5-18	ccc	3	30	R43	10.8	8.28	48.5	54.2	18.00036	13.800276	80.83495	90.33514
SRNL-SCS-2008-00005	r	SB5-15	quenched	3	31	R05	14.4	8.23	58.7	61.6	24.00048	13.716941	97.83529	102.66872
SRNL-SCS-2008-00005	r	Soln Std	ref	3	32	STD-23-3	19.7	10.2	83.1	50	19.7	10.2	83.1	50
SRNL-SCS-2008-00005	s	Soln Std	ref	1	1	STD-31-1	19.3	9.53	80.7	47.8	19.3	9.53	80.7	47.8
SRNL-SCS-2008-00005	s	SB5-11	ccc	1	2	S84	12.2	7.65	47.2	56.5	20.33374	12.750255	78.66824	94.16855
SRNL-SCS-2008-00005	s	SB5-04	quenched	1	3	S59	11.4	5.12	41.4	49.4	19.00038	8.533504	69.00138	82.33498
SRNL-SCS-2008-00005	s	SB5-01	quenched	1	4	S19	6.19	7.26	43.6	43.3	10.316873	12.100242	72.66812	72.16811
SRNL-SCS-2008-00005	s	SB5-12	quenched	1	5	S82	12.3	5.77	46.7	52.1	20.50041	9.616859	77.83489	86.83507
SRNL-SCS-2008-00005	s	SB5-05	quenched	1	6	S07	7.43	8.54	50.4	49.3	12.383581	14.233618	84.00168	82.16831
SRNL-SCS-2008-00005	s	SB5-07	ccc	1	7	S74	9.49	6.46	39.4	47.4	15.816983	10.766882	65.66798	79.00158
SRNL-SCS-2008-00005	s	SB5-08	quenched	1	8	S83	11.7	5.38	40.7	51.4	19.50039	8.966846	67.83469	85.66838
SRNL-SCS-2008-00005	s	SB5-13	quenched	1	9	S60	10.8	11.2	72.7	68.5	18.00036	18.66704	121.16909	114.16895
SRNL-SCS-2008-00005	s	EA	ref	1	10	S48	35.9	10.9	101.2	53	598.33453	181.66703	1686.67	883.3351
SRNL-SCS-2008-00005	s	SB5-11	quenched	1	11	S61	11.7	7.33	47.5	53.6	19.50039	12.216911	79.16825	89.33512
SRNL-SCS-2008-00005	s	SB5-08	ccc	1	12	S23	11.6	5.18	36.6	50.1	19.33372	8.633506	61.00122	83.50167
SRNL-SCS-2008-00005	s	SB5-13	ccc	1	13	S67	10.7	11.4	70.6	68.4	17.83369	19.00038	117.66902	114.00228
SRNL-SCS-2008-00005	s	ARM-1	ref	1	14	S86	10.5	8.12	23.2	37.2	17.50035	13.533604	38.66744	62.00124
SRNL-SCS-2008-00005	s	SB5-02	ccc	1	15	S66	7.14	7.38	39.4	49.9	11.900238	12.300246	65.66798	83.16833
SRNL-SCS-2008-00005	s	Soln Std	ref	1	16	STD-31-2	20	9.71	79.4	51.5	20	9.71	79.4	51.5

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	s	SB5-02	quenched	1	17	S24	8.07	7.58	44	52.4	13.450269	12.633586	73.3348	87.33508
SRNL-SCS-2008-00005	s	SB5-03	quenched	1	18	S63	9.37	6.24	40	47.4	15.616979	10.400208	66.668	79.00158
SRNL-SCS-2008-00005	s	SB5-09	ccc	1	19	S29	9.41	10.2	57	59.9	15.683647	17.00034	95.0019	99.83533
SRNL-SCS-2008-00005	s	SB5-01	ccc	1	20	S73	6.64	7.67	41.8	45.8	11.066888	12.783589	69.66806	76.33486
SRNL-SCS-2008-00005	s	blank	ref	1	21	S49	<1.00	<1.00	<1.00	<0.100	0.83335	0.83335	0.83335	0.083335
SRNL-SCS-2008-00005	s	SB5-10	ccc	1	22	S76	10	9.39	50.9	63.3	16.667	15.650313	84.83503	105.50211
SRNL-SCS-2008-00005	s	SB5-06	ccc	1	23	S01	9.79	6.38	38	48.9	16.316993	10.633546	63.3346	81.50163
SRNL-SCS-2008-00005	s	SB5-07	quenched	1	24	S65	11.6	7.01	44.7	53.6	19.33372	11.683567	74.50149	89.33512
SRNL-SCS-2008-00005	s	SB5-04	ccc	1	25	S39	11.4	5.22	37.4	52	19.00038	8.700174	62.33458	86.6684
SRNL-SCS-2008-00005	s	SB5-05	ccc	1	26	S09	8.57	9.09	48.4	53	14.283619	15.150303	80.66828	88.3351
SRNL-SCS-2008-00005	s	SB5-03	ccc	1	27	S78	11.3	9.62	48.6	59	18.83371	16.033654	81.00162	98.3353
SRNL-SCS-2008-00005	s	SB5-06	quenched	1	28	S16	9.03	8.5	55.6	55.6	15.050301	14.16695	92.66852	92.66852
SRNL-SCS-2008-00005	s	SB5-10	quenched	1	29	S38	14.8	9.88	63.4	66.7	24.66716	16.466996	105.66878	111.16889
SRNL-SCS-2008-00005	s	SB5-09	quenched	1	30	S04	10.6	11	72	67.1	17.66702	18.3337	120.0024	111.83557
SRNL-SCS-2008-00005	s	SB5-12	ccc	1	31	S57	12.1	5.83	49.7	56.6	20.16707	9.716861	82.83499	94.33522
SRNL-SCS-2008-00005	s	Soln Std	ref	1	32	STD-31-3	19.8	10.1	79.5	53.5	19.8	10.1	79.5	53.5
SRNL-SCS-2008-00005	s	Soln Std	ref	2	1	STD-32-1	20	9.7	79.9	50.3	20	9.7	79.9	50.3
SRNL-SCS-2008-00005	s	SB5-11	ccc	2	2	S15	11.6	7.61	45.3	53.8	19.33372	12.683587	75.50151	89.66846
SRNL-SCS-2008-00005	s	SB5-02	ccc	2	3	S33	6.92	7.38	38.7	48.1	11.533564	12.300246	64.50129	80.16827
SRNL-SCS-2008-00005	s	SB5-10	ccc	2	4	S05	9.16	9.37	50.1	59.6	15.266972	15.616979	83.50167	99.33532
SRNL-SCS-2008-00005	s	EA	ref	2	5	S54	35.8	11.2	100	53.4	596.66786	186.66704	1666.67	890.00178
SRNL-SCS-2008-00005	s	SB5-04	ccc	2	6	S56	10.2	5.07	35.9	47.3	17.00034	8.450169	59.83453	78.83491
SRNL-SCS-2008-00005	s	SB5-13	ccc	2	7	S10	10.1	11.1	69.2	64	16.83367	18.50037	115.33564	106.6688
SRNL-SCS-2008-00005	s	SB5-06	quenched	2	8	S02	7.87	8.04	44.7	51.4	13.116929	13.400268	74.50149	85.66838
SRNL-SCS-2008-00005	s	SB5-05	quenched	2	9	S26	7.18	8.51	49.6	48.2	11.966906	14.183617	82.66832	80.33494
SRNL-SCS-2008-00005	s	SB5-12	ccc	2	10	S47	11.4	5.6	42.6	49.9	19.00038	9.33352	71.00142	83.16833
SRNL-SCS-2008-00005	s	ARM-1	ref	2	11	S58	9.79	7.98	21.8	35.2	16.316993	13.300266	36.33406	58.66784
SRNL-SCS-2008-00005	s	SB5-01	quenched	2	12	S79	5.95	7.37	42.5	42.6	9.916865	12.283579	70.83475	71.00142

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	s	SB5-13	quenched	2	13	S64	10.6	11.6	75.2	67.2	17.66702	19.33372	125.33584	112.00224
SRNL-SCS-2008-00005	s	SB5-12	quenched	2	14	S18	12.4	5.88	45.3	52.2	20.66708	9.800196	75.50151	87.00174
SRNL-SCS-2008-00005	s	SB5-07	ccc	2	15	S36	9.68	6.86	40.9	48.5	16.133656	11.433562	68.16803	80.83495
SRNL-SCS-2008-00005	s	Soln Std	ref	2	16	STD-32-2	18.9	9.55	80.2	48.6	18.9	9.55	80.2	48.6
SRNL-SCS-2008-00005	s	SB5-08	ccc	2	17	S27	10.5	5.12	37.4	45.7	17.50035	8.533504	62.33458	76.16819
SRNL-SCS-2008-00005	s	SB5-09	ccc	2	18	S80	8.7	9.91	55.1	55.8	14.50029	16.516997	91.83517	93.00186
SRNL-SCS-2008-00005	s	SB5-04	quenched	2	19	S30	10.8	5.21	40.3	47.6	18.00036	8.683507	67.16801	79.33492
SRNL-SCS-2008-00005	s	SB5-01	ccc	2	20	S69	5.56	7.18	38.9	40.4	9.266852	11.966906	64.83463	67.33468
SRNL-SCS-2008-00005	s	SB5-03	ccc	2	21	S21	8.11	8.49	45.1	54.4	13.516937	14.150283	75.16817	90.66848
SRNL-SCS-2008-00005	s	SB5-02	quenched	2	22	S41	6.41	7.02	38.8	45.3	10.683547	11.700234	64.66796	75.50151
SRNL-SCS-2008-00005	s	SB5-09	quenched	2	23	S20	8.88	10	57.9	56.9	14.800296	16.667	96.50193	94.83523
SRNL-SCS-2008-00005	s	SB5-03	quenched	2	24	S62	8.48	6.25	38.9	44.8	14.133616	10.416875	64.83463	74.66816
SRNL-SCS-2008-00005	s	SB5-10	quenched	2	25	S31	8.54	8.92	51.3	56.5	14.233618	14.866964	85.50171	94.16855
SRNL-SCS-2008-00005	s	SB5-06	ccc	2	26	S77	7.7	5.9	37.2	42.1	12.83359	9.83353	62.00124	70.16807
SRNL-SCS-2008-00005	s	SB5-11	quenched	2	27	S70	10.3	7.14	45.5	50.1	17.16701	11.900238	75.83485	83.50167
SRNL-SCS-2008-00005	s	SB5-05	ccc	2	28	S37	6.99	8.66	47.8	47.5	11.650233	14.433622	79.66826	79.16825
SRNL-SCS-2008-00005	s	SB5-08	quenched	2	29	S43	10.5	5.25	39.3	47.5	17.50035	8.750175	65.50131	79.16825
SRNL-SCS-2008-00005	s	SB5-07	quenched	2	30	S13	9.36	6.63	41.8	46.5	15.600312	11.050221	69.66806	77.50155
SRNL-SCS-2008-00005	s	Soln Std	ref	2	31	STD-32-2	18.2	9.45	80.4	47.2	18.2	9.45	80.4	47.2
SRNL-SCS-2008-00005	s	Soln Std	ref	3	1	STD-33-1	19.8	9.64	81.7	49.8	19.8	9.64	81.7	49.8
SRNL-SCS-2008-00005	s	SB5-10	ccc	3	2	S44	9.19	9.18	49.3	59.3	15.316973	15.300306	82.16831	98.83531
SRNL-SCS-2008-00005	s	SB5-02	ccc	3	3	S81	6.85	7.42	38.8	49.4	11.416895	12.366914	64.66796	82.33498
SRNL-SCS-2008-00005	s	SB5-06	ccc	3	4	S35	8.45	6.19	36.5	45.5	14.083615	10.316873	60.83455	75.83485
SRNL-SCS-2008-00005	s	SB5-06	quenched	3	5	S51	8.19	8.33	45.8	54.9	13.650273	13.883611	76.33486	91.50183
SRNL-SCS-2008-00005	s	blank	ref	3	6	S42	<1.00	<1.00	<1.00	<0.100	0.83335	0.83335	0.83335	0.083335
SRNL-SCS-2008-00005	s	SB5-04	ccc	3	7	S12	10.1	5.21	36.8	49.4	16.83367	8.683507	61.33456	82.33498
SRNL-SCS-2008-00005	s	SB5-13	quenched	3	8	S72	11	12	77	70.6	18.3337	20.0004	128.3359	117.66902
SRNL-SCS-2008-00005	s	SB5-09	ccc	3	9	S46	8.65	10.1	55	57.9	14.416955	16.83367	91.6685	96.50193

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00005	s	SB5-05	quenched	3	10	S28	7.25	8.6	48.8	49.4	12.083575	14.33362	81.33496	82.33498
SRNL-SCS-2008-00005	s	SB5-12	quenched	3	11	S40	11.9	5.7	44.6	51.2	19.83373	9.50019	74.33482	85.33504
SRNL-SCS-2008-00005	s	SB5-04	quenched	3	12	S03	10.5	5.08	39.6	47.6	17.50035	8.466836	66.00132	79.33492
SRNL-SCS-2008-00005	s	SB5-01	quenched	3	13	S50	5.88	7.46	42.8	44.2	9.800196	12.433582	71.33476	73.66814
SRNL-SCS-2008-00005	s	SB5-11	ccc	3	14	S06	11	7.51	44.7	54.1	18.3337	12.516917	74.50149	90.16847
SRNL-SCS-2008-00005	s	SB5-03	ccc	3	15	S22	8	8.38	43.6	54.7	13.3336	13.966946	72.66812	91.16849
SRNL-SCS-2008-00005	s	Soln Std	ref	3	16	STD-33-2	19	9.61	80.2	49.6	19	9.61	80.2	49.6
SRNL-SCS-2008-00005	s	SB5-12	ccc	3	17	S68	12.2	5.86	43.1	53.5	20.33374	9.766862	71.83477	89.16845
SRNL-SCS-2008-00005	s	SB5-03	quenched	3	18	S71	8.34	6.1	37.5	44	13.900278	10.16687	62.50125	73.3348
SRNL-SCS-2008-00005	s	SB5-10	quenched	3	19	S25	8.69	9.07	51.4	58.7	14.483623	15.116969	85.66838	97.83529
SRNL-SCS-2008-00005	s	SB5-01	ccc	3	20	S52	5.65	7.43	40	42.6	9.416855	12.383581	66.668	71.00142
SRNL-SCS-2008-00005	s	SB5-08	ccc	3	21	S11	10.8	5.38	37.9	49.4	18.00036	8.966846	63.16793	82.33498
SRNL-SCS-2008-00005	s	SB5-02	quenched	3	22	S32	6.42	7.05	39.7	48.2	10.700214	11.750235	66.16799	80.33494
SRNL-SCS-2008-00005	s	SB5-05	ccc	3	23	S45	6.99	8.65	46.9	49.2	11.650233	14.416955	78.16823	82.00164
SRNL-SCS-2008-00005	s	EA	ref	3	24	S55	35.2	10.9	99	52	586.66784	181.66703	1650.0033	866.6684
SRNL-SCS-2008-00005	s	SB5-09	quenched	3	25	S08	8.67	9.81	58	55.5	14.450289	16.350327	96.6686	92.50185
SRNL-SCS-2008-00005	s	SB5-07	ccc	3	26	S17	8.77	6.38	38.6	45	14.616959	10.633546	64.33462	75.0015
SRNL-SCS-2008-00005	s	SB5-08	quenched	3	27	S34	10.4	5.12	37.4	47.1	17.33368	8.533504	62.33458	78.50157
SRNL-SCS-2008-00005	s	ARM-1	ref	3	28	S85	8.9	7.5	19.8	34.3	14.83363	12.50025	33.00066	57.16781
SRNL-SCS-2008-00005	s	SB5-13	ccc	3	29	S14	10.2	11.6	71.3	68.3	17.00034	19.33372	118.83571	113.83561
SRNL-SCS-2008-00005	s	SB5-11	quenched	3	30	S75	10.7	7.34	46.3	52.2	17.83369	12.233578	77.16821	87.00174
SRNL-SCS-2008-00005	s	SB5-07	quenched	3	31	S53	9.37	6.57	40.7	47	15.616979	10.950219	67.83469	78.3349
SRNL-SCS-2008-00005	s	Soln Std	ref	3	32	STD-33-3	19.2	9.75	81.1	50.3	19.2	9.75	81.1	50.3
SRNL-SCS-2008-00042	u	Soln Std	ref	1	1	STD-11	20.2	10	83.1	51.3	20.2	10	83.1	51.3
SRNL-SCS-2008-00042	u	SB5-21	quenched	1	2	U43	8.69	6.35	43	41.1	14.483623	10.583545	71.6681	68.50137
SRNL-SCS-2008-00042	u	EA	ref	1	3	U02	37.2	11.46	103	54.2	620.00124	191.00038	1716.6701	903.33514
SRNL-SCS-2008-00042	u	SB5-24	quenched	1	4	U14	7.54	4.31	31.2	36.6	12.566918	7.183477	52.00104	61.00122
SRNL-SCS-2008-00042	u	SB5-22	ccc	1	5	U36	9.87	5.28	38.2	42.2	16.450329	8.800176	63.66794	70.33474

**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00042	u	SB5-23	quenched	1	6	U07	8.21	6.24	39.1	39.8	13.683607	10.400208	65.16797	66.33466
SRNL-SCS-2008-00042	u	SB5-26	quenched	1	7	U27	10.4	5.04	45	47.5	17.33368	8.400168	75.0015	79.16825
SRNL-SCS-2008-00042	u	SB5-24	ccc	1	8	U30	6.98	4.32	29.2	36.7	11.633566	7.200144	48.66764	61.16789
SRNL-SCS-2008-00042	u	Soln Std	ref	1	9	STD-11	18.8	9.87	82.4	50	18.8	9.87	82.4	50
SRNL-SCS-2008-00042	u	SB5-26	ccc	1	10	U26	10.8	5.32	43	49.2	18.00036	8.866844	71.6681	82.00164
SRNL-SCS-2008-00042	u	blank	ref	1	11	U01	<0.100	<1.00	<0.100	<0.100	0.083335	0.83335	0.083335	0.083335
SRNL-SCS-2008-00042	u	ARM-1	ref	1	12	U09	11.5	9.35	25.5	40.5	19.16705	15.583645	42.50085	67.50135
SRNL-SCS-2008-00042	u	SB5-25	ccc	1	13	U23	8.43	6.52	42.8	46	14.050281	10.866884	71.33476	76.6682
SRNL-SCS-2008-00042	u	SB5-21	ccc	1	14	U22	8.67	6.55	39.7	41.2	14.450289	10.916885	66.16799	68.66804
SRNL-SCS-2008-00042	u	SB5-25	quenched	1	15	U42	8.54	6.45	44.5	46.5	14.233618	10.750215	74.16815	77.50155
SRNL-SCS-2008-00042	u	SB5-22	quenched	1	16	U19	10.1	5.42	41.7	44.1	16.83367	9.033514	69.50139	73.50147
SRNL-SCS-2008-00042	u	SB5-23	ccc	1	17	U06	8.23	6.4	38	40.2	13.716941	10.66688	63.3346	67.00134
SRNL-SCS-2008-00042	u	Soln Std	ref	1	18	STD-13	19.1	10.1	84.3	50.9	19.1	10.1	84.3	50.9
SRNL-SCS-2008-00042	u	Soln Std	ref	2	1	STD-21	21.7	10.2	82.5	54	21.7	10.2	82.5	54
SRNL-SCS-2008-00042	u	SB5-21	quenched	2	2	U39	10.4	6.79	43.3	47	17.33368	11.316893	72.16811	78.3349
SRNL-SCS-2008-00042	u	SB5-26	quenched	2	3	U21	12.1	5.16	45.2	51.9	20.16707	8.600172	75.33484	86.50173
SRNL-SCS-2008-00042	u	EA	ref	2	4	U31	41.8	12.1	105	59.9	696.66806	201.66707	1750.0035	998.33533
SRNL-SCS-2008-00042	u	SB5-24	ccc	2	5	U13	8.37	4.29	29.4	39.6	13.950279	7.150143	49.00098	66.00132
SRNL-SCS-2008-00042	u	SB5-24	quenched	2	6	U15	8.56	4.36	31.2	40.1	14.266952	7.266812	52.00104	66.83467
SRNL-SCS-2008-00042	u	SB5-22	quenched	2	7	U12	11.3	5.22	38.8	45.5	18.83371	8.700174	64.66796	75.83485
SRNL-SCS-2008-00042	u	SB5-25	ccc	2	8	U16	9.23	6.19	40	46.3	15.383641	10.316873	66.668	77.16821
SRNL-SCS-2008-00042	u	Soln Std	ref	2	9	STD-22	20.5	9.94	83	52.2	20.5	9.94	83	52.2
SRNL-SCS-2008-00042	u	SB5-25	quenched	2	10	U28	10.4	6.21	42.9	47.9	17.33368	10.350207	71.50143	79.83493
SRNL-SCS-2008-00042	u	SB5-26	ccc	2	11	U40	12.3	5.43	44.4	52.5	20.50041	9.050181	74.00148	87.50175
SRNL-SCS-2008-00042	u	ARM-1	ref	2	12	U20	13.7	9.71	25	44.4	22.83379	16.183657	41.6675	74.00148
SRNL-SCS-2008-00042	u	SB5-22	ccc	2	13	U35	11.7	5.37	37.5	46.5	19.50039	8.950179	62.50125	77.50155
SRNL-SCS-2008-00042	u	SB5-23	quenched	2	14	U33	9.73	6.37	38.9	43.8	16.216991	10.616879	64.83463	73.00146
SRNL-SCS-2008-00042	u	SB5-21	ccc	2	15	U11	10.2	6.64	39.9	45	17.00034	11.066888	66.50133	75.0015

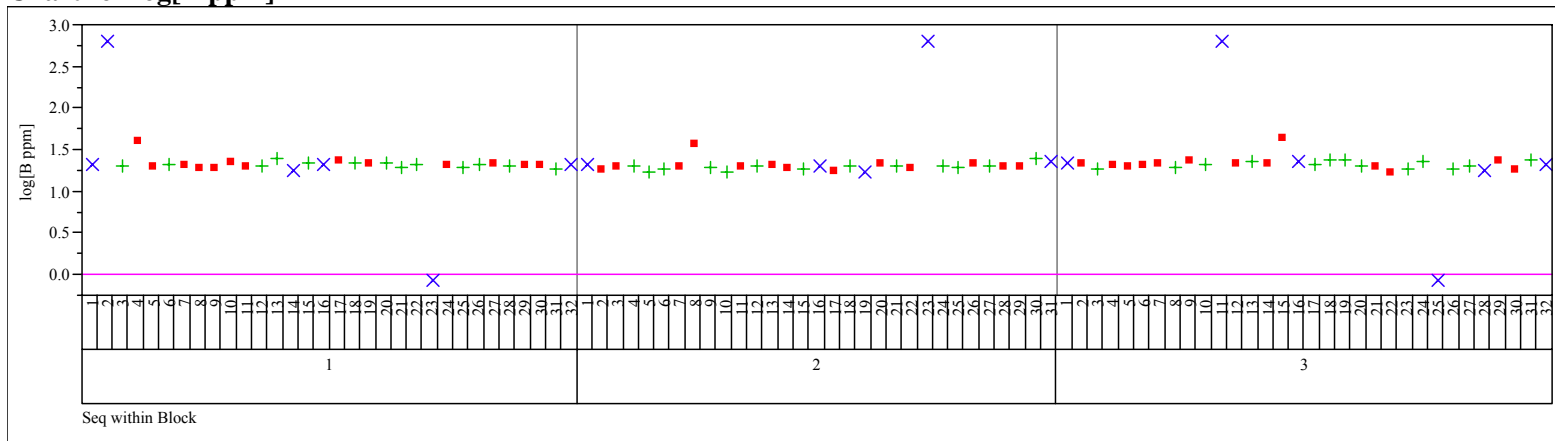
**Table B1. PSAL Measurements of the PCT Solutions (in ppm) for the Study Glasses
As-Received (ar) and After Appropriate Adjustments. (continued)**

Analytical Plan Memo	Set	Glass ID	Heat Treatment	Block	Sequence	Lab ID	B (ar)	Li (ar)	Na (ar)	Si (ar)	B	Li	Na	Si
SRNL-SCS-2008-00042	u	SB5-23	ccc	2	16	U32	10.1	6.76	38.3	45.9	16.83367	11.266892	63.83461	76.50153
SRNL-SCS-2008-00042	u	Soln Std	ref	2	17	STD-23	21.8	10.3	83.1	54.9	21.8	10.3	83.1	54.9
SRNL-SCS-2008-00042	u	Soln Std	ref	3	1	STD-31	20.7	10	83	51.7	20.7	10	83	51.7
SRNL-SCS-2008-00042	u	SB5-24	ccc	3	2	U41	7.87	4.31	29.8	38	13.116929	7.183477	49.66766	63.3346
SRNL-SCS-2008-00042	u	SB5-22	quenched	3	3	U18	10.5	5.28	41	44.3	17.50035	8.800176	68.3347	73.83481
SRNL-SCS-2008-00042	u	SB5-23	quenched	3	4	U08	8.7	6.28	39.7	40.8	14.50029	10.466876	66.16799	68.00136
SRNL-SCS-2008-00042	u	SB5-22	ccc	3	5	U05	11	5.65	41.1	47	18.3337	9.416855	68.50137	78.3349
SRNL-SCS-2008-00042	u	blank	ref	3	6	U29	<0.100	<1.00	<0.100	<0.100	0.083335	0.83335	0.083335	0.083335
SRNL-SCS-2008-00042	u	SB5-26	ccc	3	7	U03	11	5.42	44	51.3	18.3337	9.033514	73.3348	85.50171
SRNL-SCS-2008-00042	u	SB5-25	ccc	3	8	U17	8.49	6.19	40.3	45.3	14.150283	10.316873	67.16801	75.50151
SRNL-SCS-2008-00042	u	Soln Std	ref	3	9	STD-32	19.7	9.98	82.7	51.6	19.7	9.98	82.7	51.6
SRNL-SCS-2008-00042	u	ARM-1	ref	3	10	U24	12.6	9.38	25.7	41	21.00042	15.633646	42.83419	68.3347
SRNL-SCS-2008-00042	u	SB5-21	ccc	3	11	U38	9.48	6.6	39.8	42.7	15.800316	11.00022	66.33466	71.16809
SRNL-SCS-2008-00042	u	SB5-25	quenched	3	12	U10	9.39	6.55	44.6	48.6	15.650313	10.916885	74.33482	81.00162
SRNL-SCS-2008-00042	u	EA	ref	3	13	U25	38.4	11.8	107	56.8	640.00128	196.66706	1783.3369	946.66856
SRNL-SCS-2008-00042	u	SB5-26	quenched	3	14	U34	11.03	5.06	46.3	47.9	18.383701	8.433502	77.16821	79.83493
SRNL-SCS-2008-00042	u	SB5-21	quenched	3	15	U04	9.43	6.62	43.9	43.3	15.716981	11.033554	73.16813	72.16811
SRNL-SCS-2008-00042	u	SB5-23	ccc	3	16	U44	8.89	6.67	40.1	42.9	14.816963	11.116889	66.83467	71.50143
SRNL-SCS-2008-00042	u	SB5-24	quenched	3	17	U37	8.01	4.62	34.4	39.4	13.350267	7.700154	57.33448	65.66798
SRNL-SCS-2008-00042	u	Soln Std	ref	3	18	STD-33	19.6	10.1	84.6	51.5	19.6	10.1	84.6	51.5

**Exhibit B1. Laboratory PCT Measurements in Analytical Sequence by Block
 for Each Set and Analytical Plan Memo.**

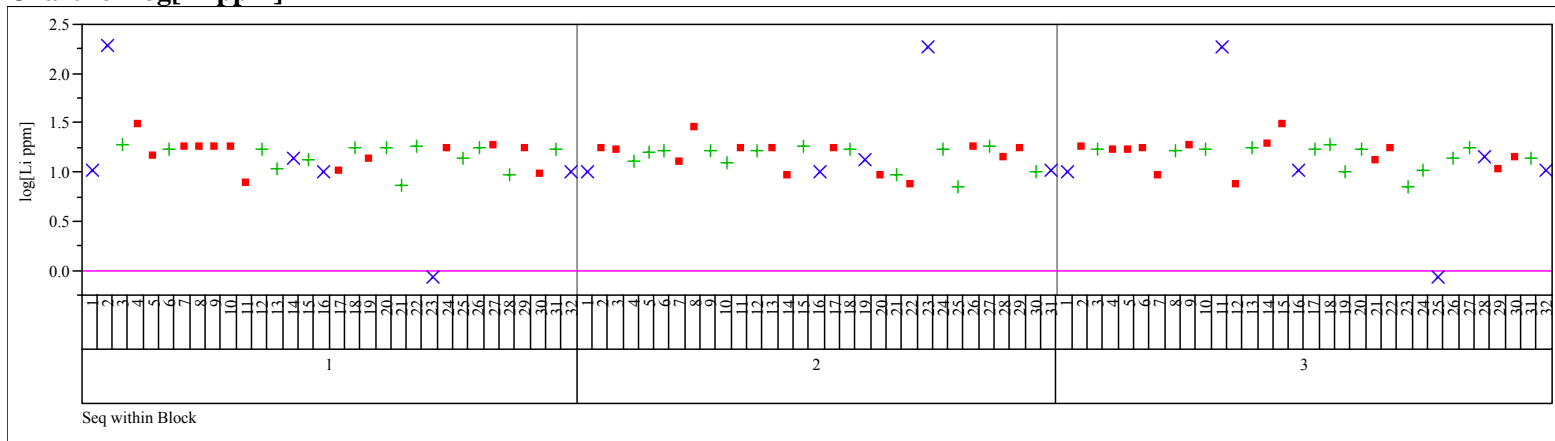
Memo=SRNL-SCS-2008-00005, Set=r

Chart for log[B ppm]



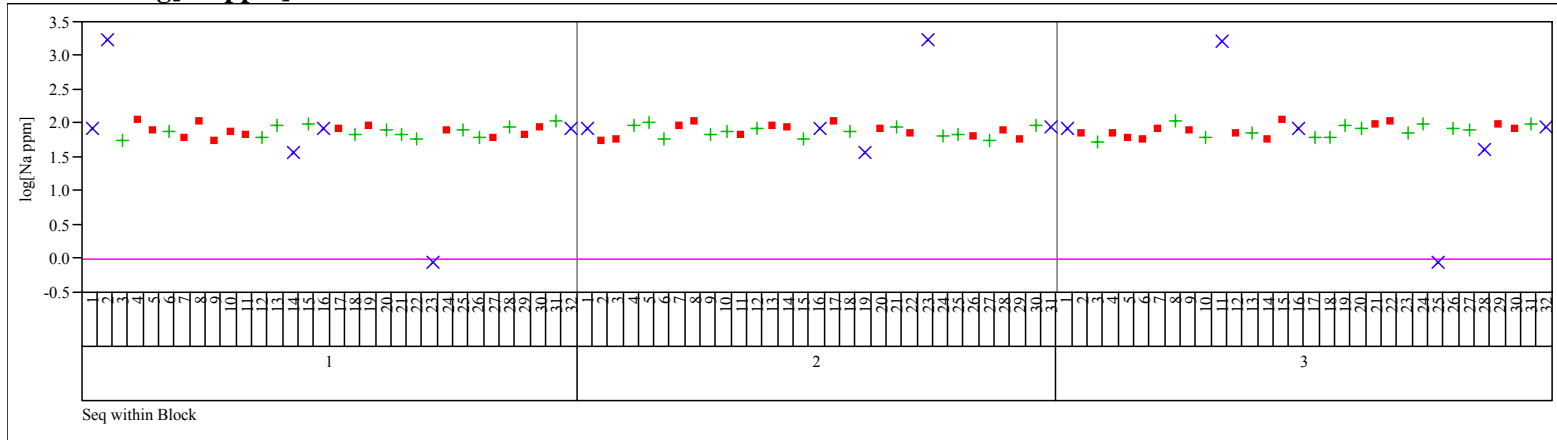
Memo=SRNL-SCS-2008-00005, Set=r

Chart for log[Li ppm]

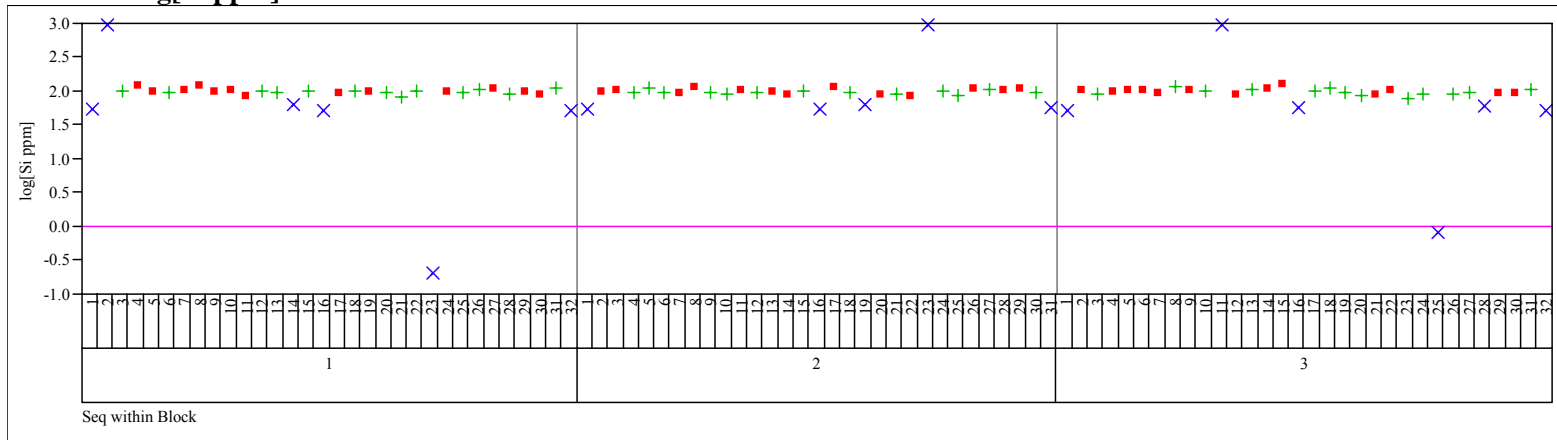


**Exhibit B1. Laboratory PCT Measurements in Analytical Sequence by Block
 for Each Set and Analytical Plan Memo. (continued)**

Memo=SRNL-SCS-2008-00005, Set=r
Chart for log[Na ppm]



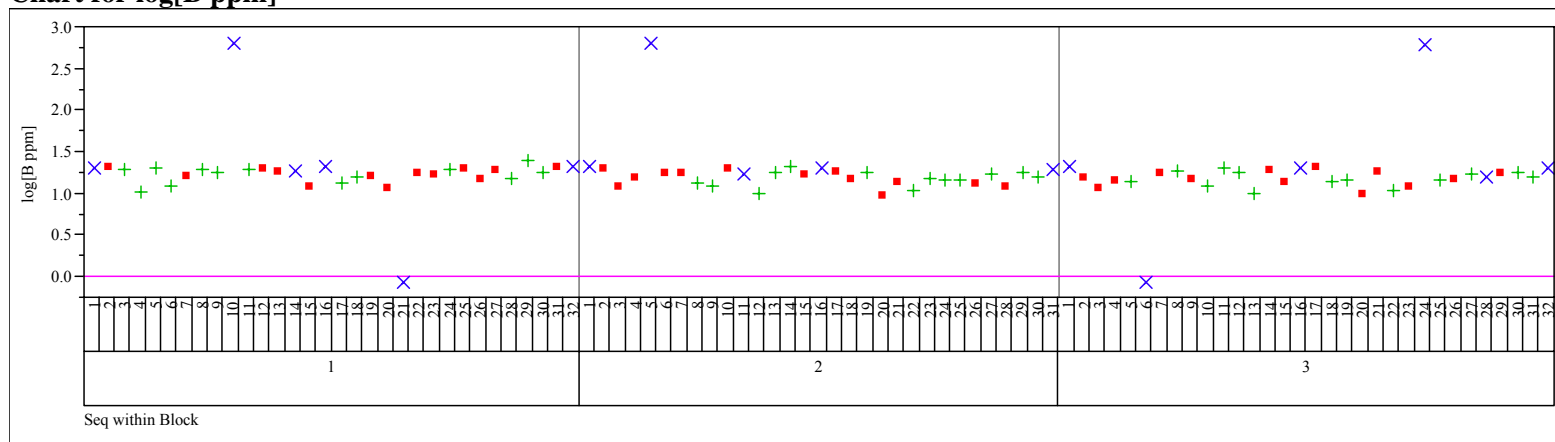
Memo=SRNL-SCS-2008-00005, Set=r
Chart for log[Si ppm]



**Exhibit B1. Laboratory PCT Measurements in Analytical Sequence by Block
for Each Set and Analytical Plan Memo. (continued)**

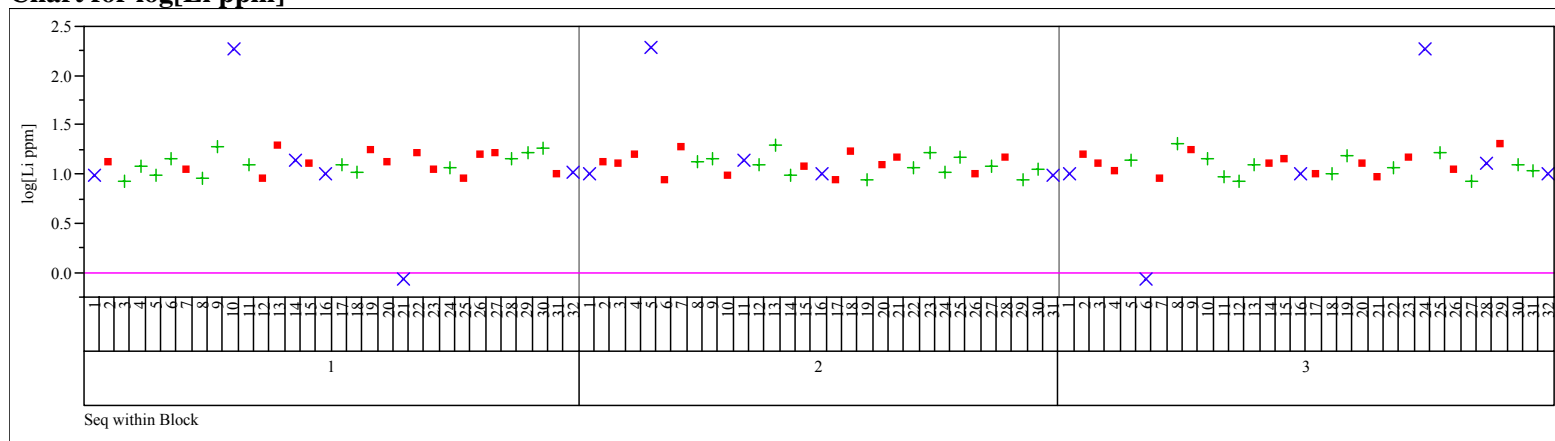
Memo=SRNL-SCS-2008-00005, Set=s

Chart for log[B ppm]



Memo=SRNL-SCS-2008-00005, Set=s

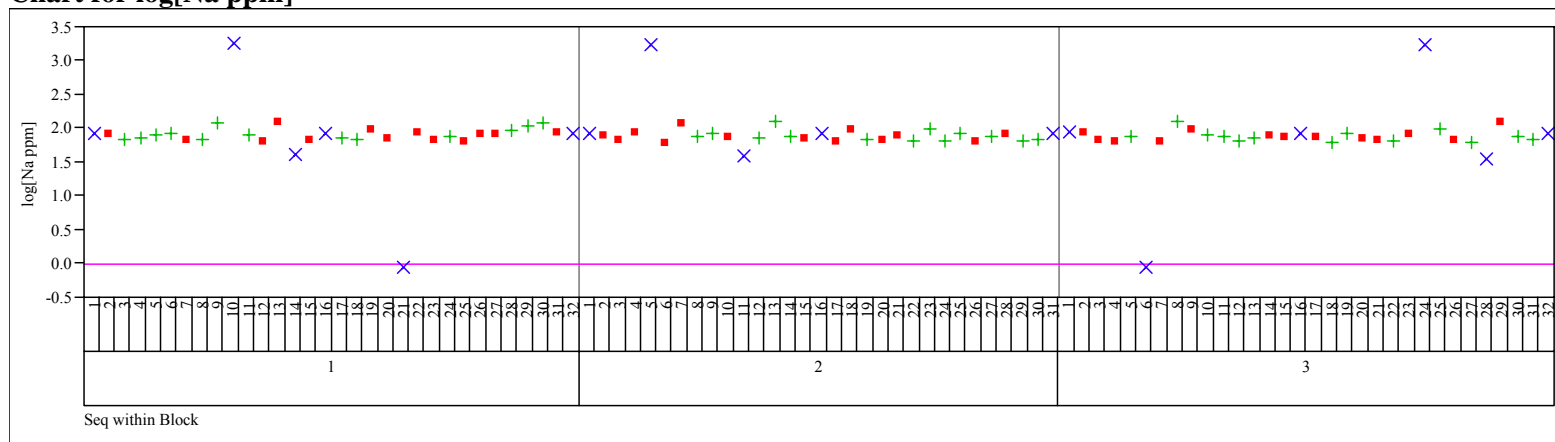
Chart for log[Li ppm]



**Exhibit B1. Laboratory PCT Measurements in Analytical Sequence by Block
 for Each Set and Analytical Plan Memo. (continued)**

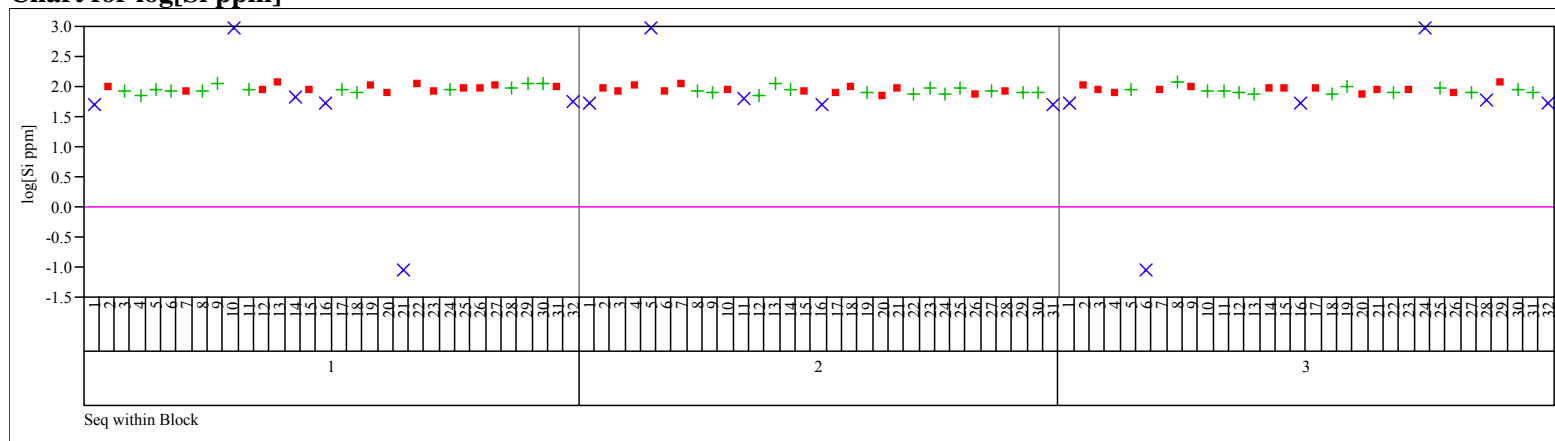
Memo=SRNL-SCS-2008-00005, Set=s

Chart for log[Na ppm]



Memo=SRNL-SCS-2008-00005, Set=s

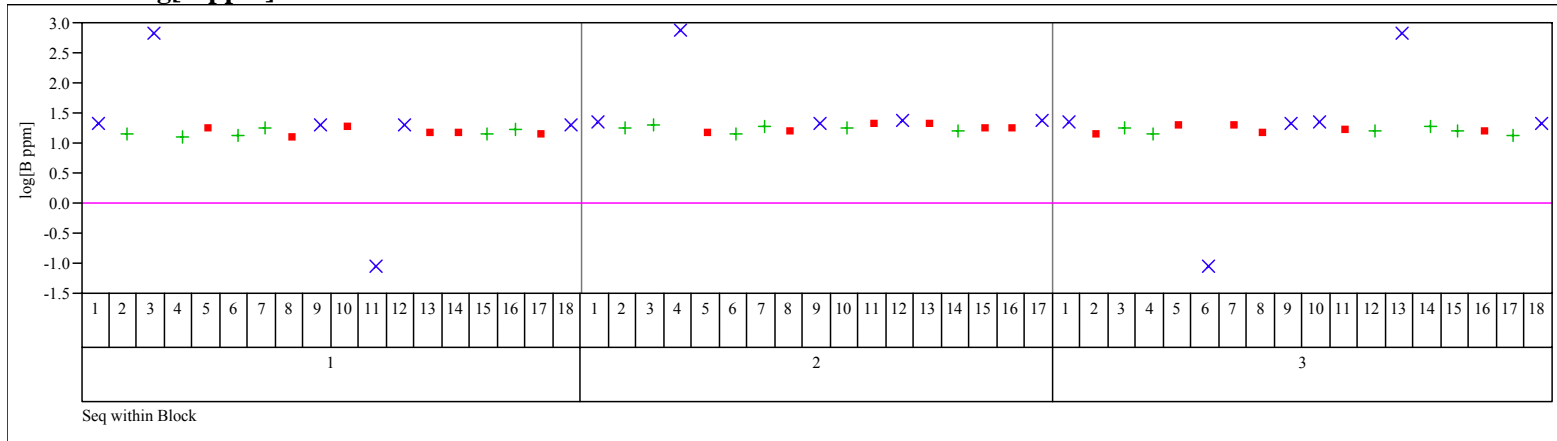
Chart for log[Si ppm]



**Exhibit B1. Laboratory PCT Measurements in Analytical Sequence by Block
 for Each Set and Analytical Plan Memo. (continued)**

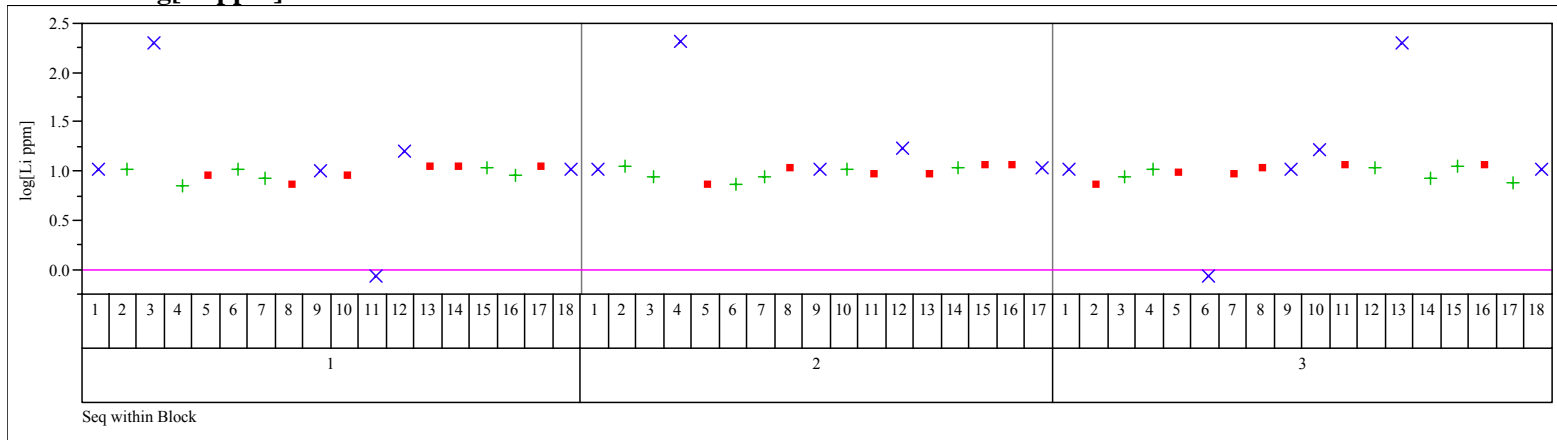
Memo=SRNL-SCS-2008-00042, Set=u

Chart for log[B ppm]



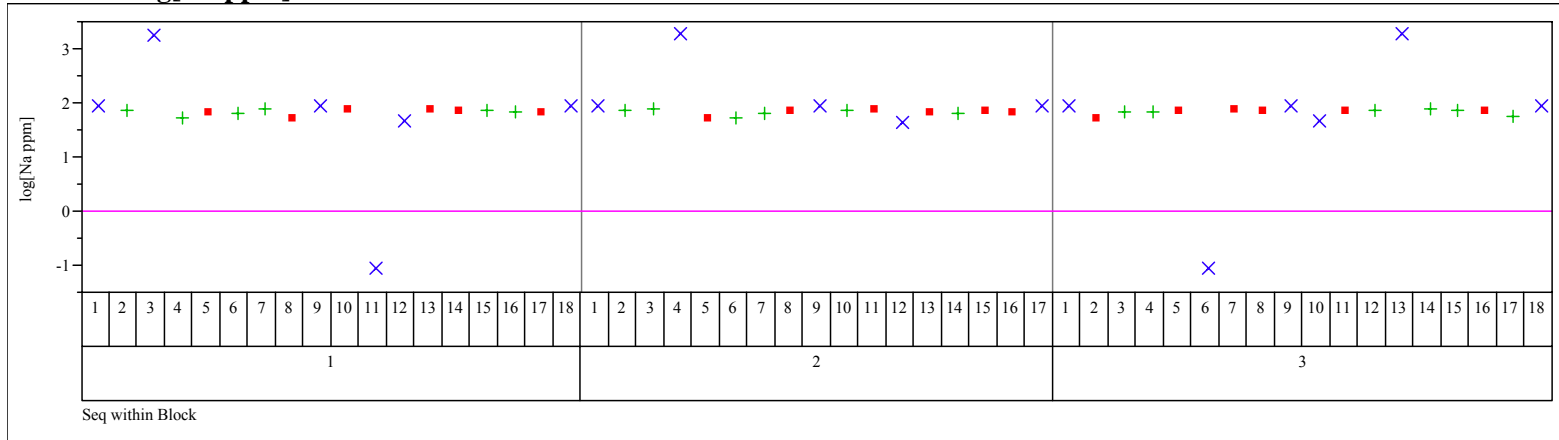
Memo=SRNL-SCS-2008-00042, Set=u

Chart for log[Li ppm]



**Exhibit B1. Laboratory PCT Measurements in Analytical Sequence by Block
 for Each Set and Analytical Plan Memo. (continued)**

Memo=SRNL-SCS-2008-00042, Set=u
Chart for log[Na ppm]



Memo=SRNL-SCS-2008-00042, Set=u
Chart for log[Si ppm]

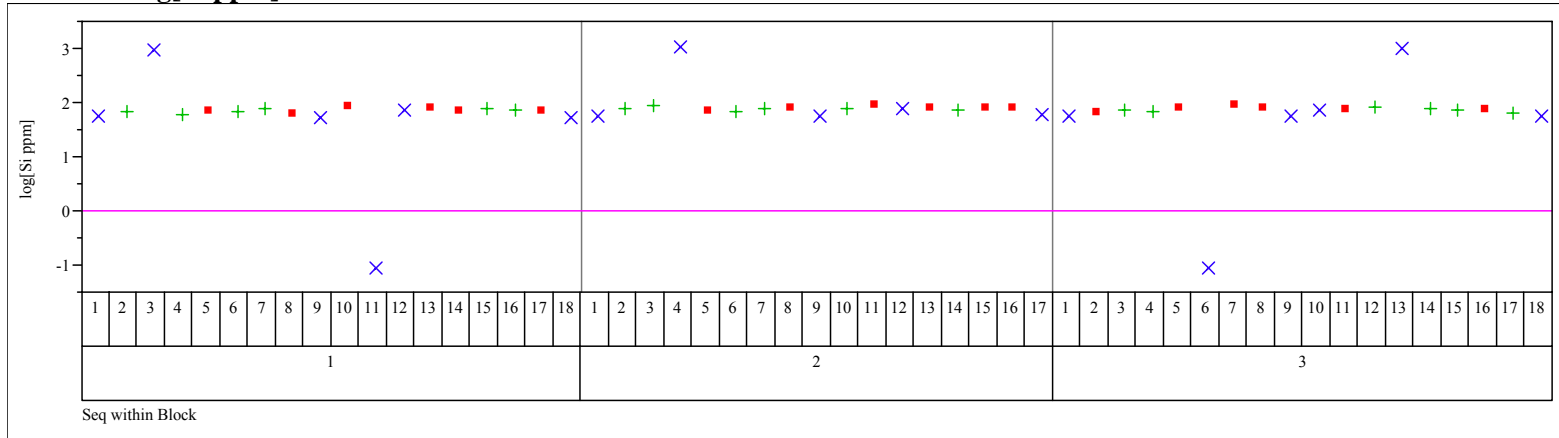
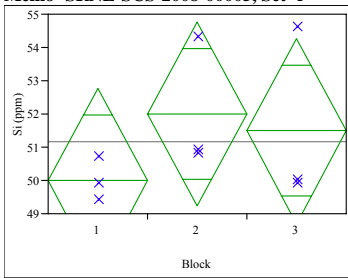


Exhibit B2. Measurements of the Multi-Element Solution Standard by ICP Block.

Oneway Analysis of Si (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=r



Oneway Anova
Summary of Fit

Rsquare	0.218708
Adj Rsquare	-0.04172
Root Mean Square Error	1.967232
Mean of Response	51.16667
Observations (or Sum Wgts)	9

Analysis of Variance

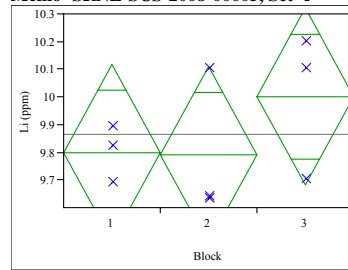
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	6.500000	3.25000	0.8398	0.4769
Error	6	23.220000	3.87000		
C. Total	8	29.720000			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	50.0000	1.1358	47.221	52.779
2	3	52.0000	1.1358	49.221	54.779
3	3	51.5000	1.1358	48.721	54.279

Std Error uses a pooled estimate of error variance

Oneway Analysis of Li (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=r



Oneway Anova
Summary of Fit

Rsquare	0.216452
Adj Rsquare	-0.04473
Root Mean Square Error	0.225389
Mean of Response	9.863333
Observations (or Sum Wgts)	9

Analysis of Variance

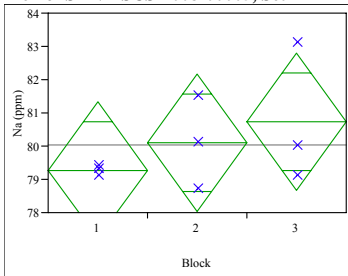
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	0.08420000	0.042100	0.8287	0.4811
Error	6	0.30480000	0.050800		
C. Total	8	0.38900000			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	9.8000	0.13013	9.4816	10.118
2	3	9.7900	0.13013	9.4716	10.108
3	3	10.0000	0.13013	9.6816	10.318

Std Error uses a pooled estimate of error variance

Oneway Analysis of Na (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=r



Oneway Anova
Summary of Fit

Rsquare	0.202663
Adj Rsquare	-0.06312
Root Mean Square Error	1.459071
Mean of Response	80.03333
Observations (or Sum Wgts)	9

Analysis of Variance

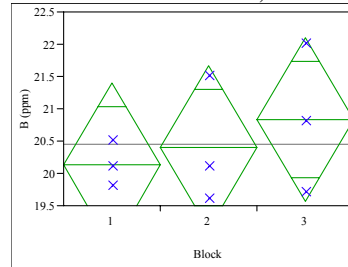
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	3.246667	1.62333	0.7625	0.5069
Error	6	12.773333	2.12889		
C. Total	8	16.020000			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	79.2667	0.84240	77.205	81.328
2	3	80.1000	0.84240	78.039	82.161
3	3	80.7333	0.84240	78.672	82.795

Std Error uses a pooled estimate of error variance

Oneway Analysis of B (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=r



Oneway Anova
Summary of Fit

Rsquare	0.134156
Adj Rsquare	-0.15446
Root Mean Square Error	0.897527
Mean of Response	20.45556
Observations (or Sum Wgts)	9

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	0.7488889	0.374444	0.4648	0.6491
Error	6	4.8333333	0.805556		
C. Total	8	5.5822222			

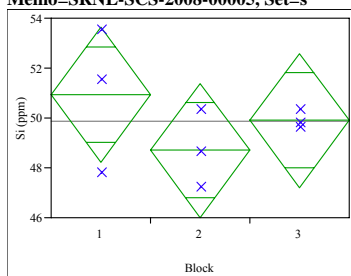
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	20.1333	0.51819	18.865	21.401
2	3	20.4000	0.51819	19.132	21.668
3	3	20.8333	0.51819	19.565	22.101

Std Error uses a pooled estimate of error variance

Exhibit B2. Measurements of the Multi-Element Solution Standard by ICP Block. (cont'd)

Oneway Analysis of Si (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=s



Oneway Anova
Summary of Fit

Rsquare	0.255802
Adj Rsquare	0.007735
Root Mean Square Error	1.906422
Mean of Response	49.84444
Observations (or Sum Wgts)	9

Analysis of Variance

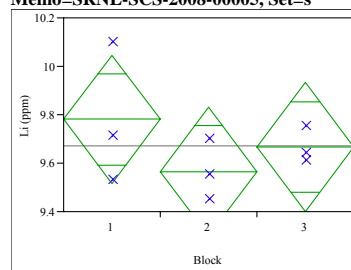
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	7.495556	3.74778	1.0312	0.4122
Error	6	21.806667	3.63444		
C. Total	8	29.302222			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	50.9333	1.1007	48.240	53.627
2	3	48.7000	1.1007	46.007	51.393
3	3	49.9000	1.1007	47.207	52.593

Std Error uses a pooled estimate of error variance

Oneway Analysis of Li (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=s



Oneway Anova
Summary of Fit

Rsquare	0.243528
Adj Rsquare	-0.00863
Root Mean Square Error	0.188119
Mean of Response	9.671111
Observations (or Sum Wgts)	9

Analysis of Variance

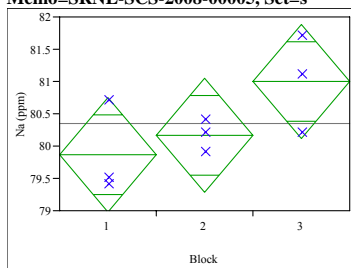
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	0.06835556	0.034178	0.9658	0.4329
Error	6	0.21233333	0.035389		
C. Total	8	0.28068889			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	9.78000	0.10861	9.5142	10.046
2	3	9.56667	0.10861	9.3009	9.832
3	3	9.66667	0.10861	9.4009	9.932

Std Error uses a pooled estimate of error variance

Oneway Analysis of Na (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=s



Oneway Anova
Summary of Fit

Rsquare	0.47211
Adj Rsquare	0.296146
Root Mean Square Error	0.620931
Mean of Response	80.34444
Observations (or Sum Wgts)	9

Analysis of Variance

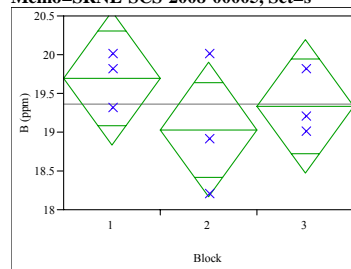
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	2.0688889	1.03444	2.6830	0.1471
Error	6	2.3133333	0.38556		
C. Total	8	4.3822222			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	79.8667	0.35849	78.989	80.744
2	3	80.1667	0.35849	79.289	81.044
3	3	81.0000	0.35849	80.123	81.877

Std Error uses a pooled estimate of error variance

Oneway Analysis of B (ppm) By Block
Memo=SRNL-SCS-2008-00005, Set=s



Oneway Anova
Summary of Fit

Rsquare	0.228897
Adj Rsquare	-0.02814
Root Mean Square Error	0.612826
Mean of Response	19.35556
Observations (or Sum Wgts)	9

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	0.6688889	0.334444	0.8905	0.4585
Error	6	2.2533333	0.375556		
C. Total	8	2.9222222			

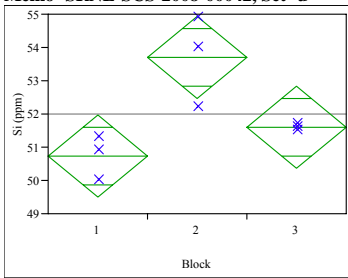
Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	19.7000	0.35382	18.834	20.566
2	3	19.0333	0.35382	18.168	19.899
3	3	19.3333	0.35382	18.468	20.199

Std Error uses a pooled estimate of error variance

Exhibit B2. Measurements of the Multi-Element Solution Standard by ICP Block. (cont'd)

Oneway Analysis of Si (ppm) By Block
Memo=SRNL-SCS-2008-00042, Set=u



Oneway Anova
Summary of Fit

Rsquare	0.748689
Adj Rsquare	0.664919
Root Mean Square Error	0.883805
Mean of Response	52.01111
Observations (or Sum Wgts)	9

Analysis of Variance

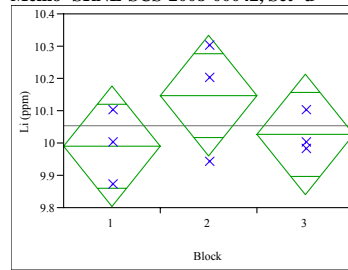
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	13.962222	6.98111	8.9374	0.0159
Error	6	4.686667	0.78111		
C. Total	8	18.648889			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	50.7333	0.51027	49.485	51.982
2	3	53.7000	0.51027	52.451	54.949
3	3	51.6000	0.51027	50.351	52.849

Std Error uses a pooled estimate of error variance

Oneway Analysis of Li (ppm) By Block
Memo=SRNL-SCS-2008-00042, Set=u



Oneway Anova
Summary of Fit

Rsquare	0.279353
Adj Rsquare	0.039137
Root Mean Square Error	0.131614
Mean of Response	10.05444
Observations (or Sum Wgts)	9

Analysis of Variance

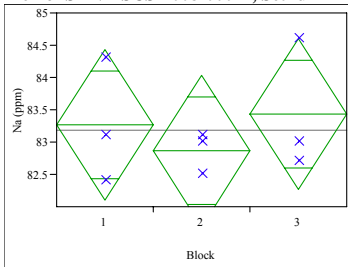
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	0.04028889	0.020144	1.1629	0.3743
Error	6	0.10393333	0.017322		
C. Total	8	0.14422222			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	9.9900	0.07599	9.8041	10.176
2	3	10.1467	0.07599	9.9607	10.333
3	3	10.0267	0.07599	9.8407	10.213

Std Error uses a pooled estimate of error variance

Oneway Analysis of Na (ppm) By Block
Memo=SRNL-SCS-2008-00042, Set=u



Oneway Anova
Summary of Fit

Rsquare	0.109465
Adj Rsquare	-0.18738
Root Mean Square Error	0.830662
Mean of Response	83.18889
Observations (or Sum Wgts)	9

Analysis of Variance

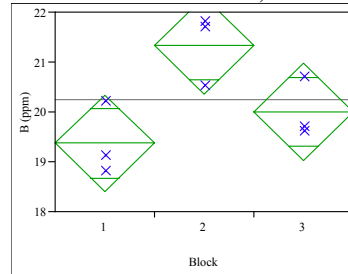
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	0.5088889	0.254444	0.3688	0.7062
Error	6	4.1400000	0.690000		
C. Total	8	4.6488889			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	83.2667	0.47958	82.093	84.440
2	3	82.8667	0.47958	81.693	84.040
3	3	83.4333	0.47958	82.260	84.607

Std Error uses a pooled estimate of error variance

Oneway Analysis of B (ppm) By Block
Memo=SRNL-SCS-2008-00042, Set=u



Oneway Anova
Summary of Fit

Rsquare	0.677877
Adj Rsquare	0.570503
Root Mean Square Error	0.692018
Mean of Response	20.23333
Observations (or Sum Wgts)	9

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Block	2	6.0466667	3.02333	6.3132	0.0334
Error	6	2.8733333	0.47889		
C. Total	8	8.9200000			

Means for Oneway Anova

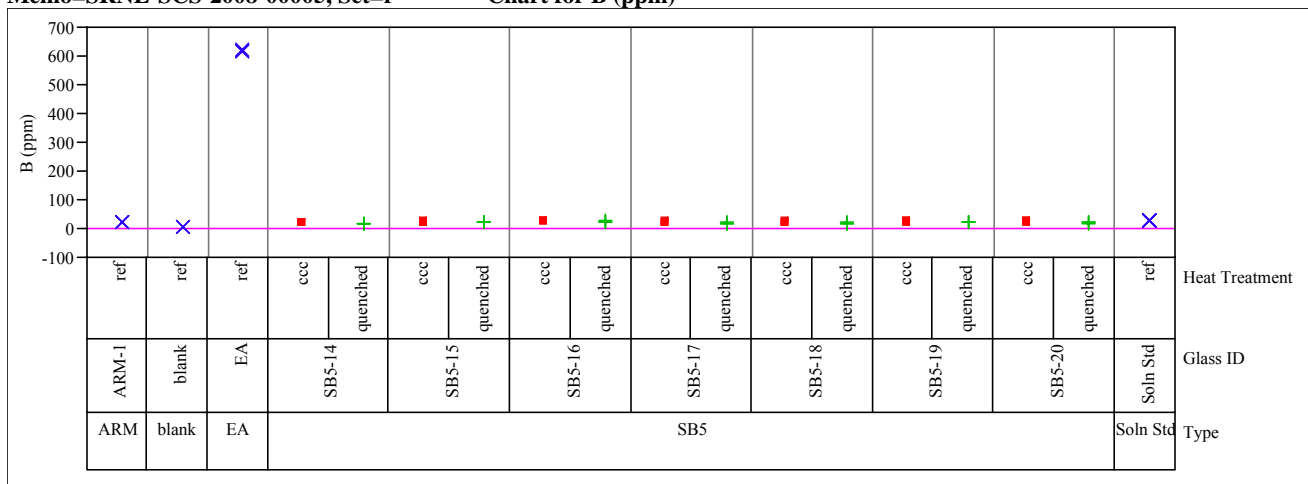
Level	Number	Mean	Std Error	Lower 95%	Upper 95%
1	3	19.3667	0.39954	18.389	20.344
2	3	21.3333	0.39954	20.356	22.311
3	3	20.0000	0.39954	19.022	20.978

Std Error uses a pooled estimate of error variance

Exhibit B3. Laboratory PCT Measurements by Glass Identifier for Study Glasses and Standards.

Memo=SRNL-SCS-2008-00005, Set=r

Chart for B (ppm)



Memo=SRNL-SCS-2008-00005, Set=r

Chart for Li (ppm)

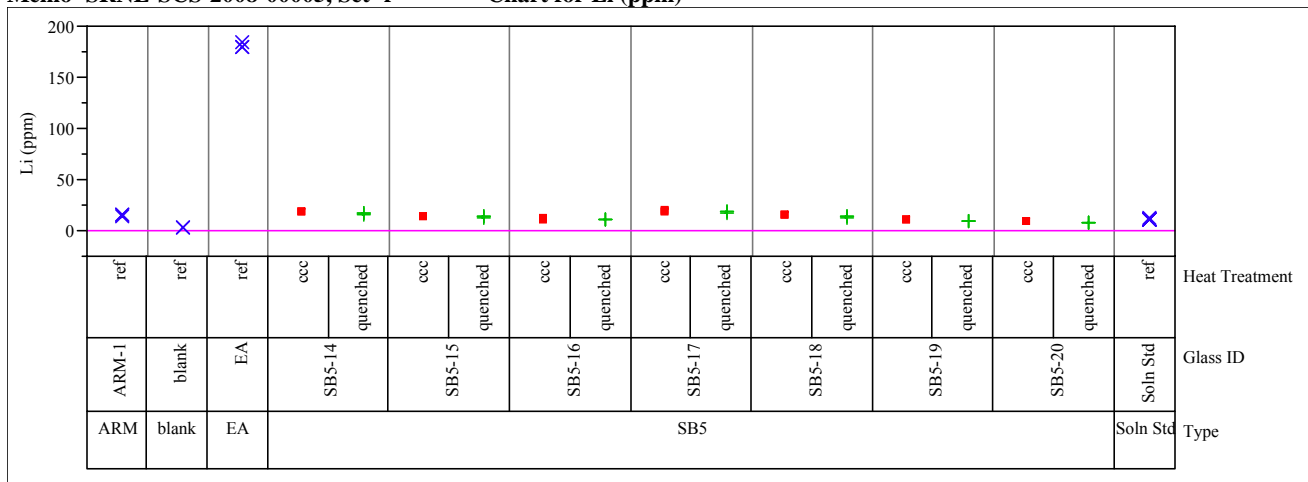
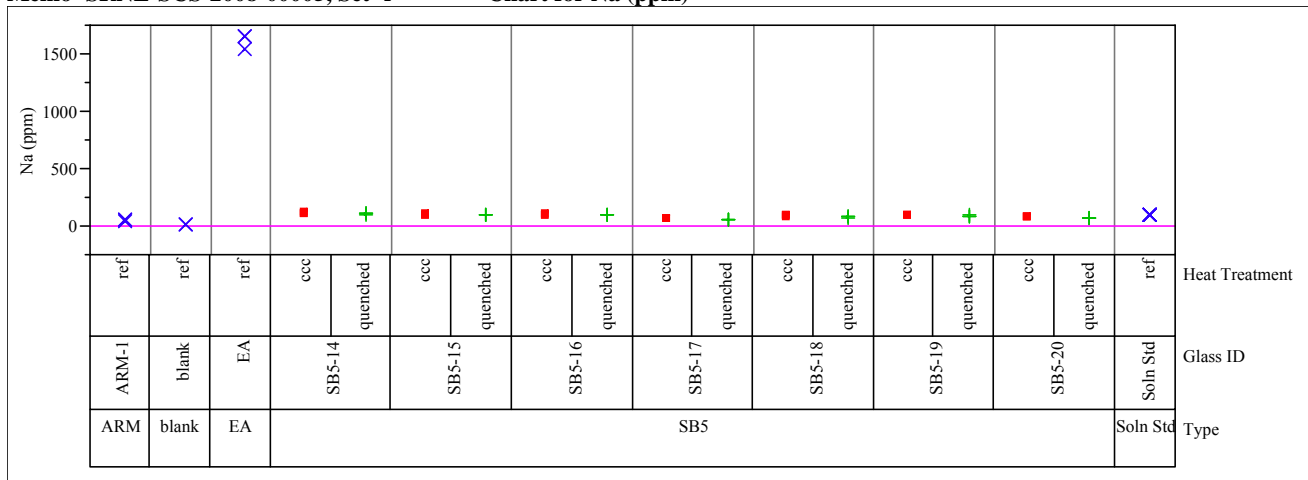


Exhibit B3. Laboratory PCT Measurements by Glass Identifier for Study Glasses and Standards. (continued)

Memo=SRNL-SCS-2008-00005, Set=r

Chart for Na (ppm)



Memo=SRNL-SCS-2008-00005, Set=r

Chart for Si (ppm)

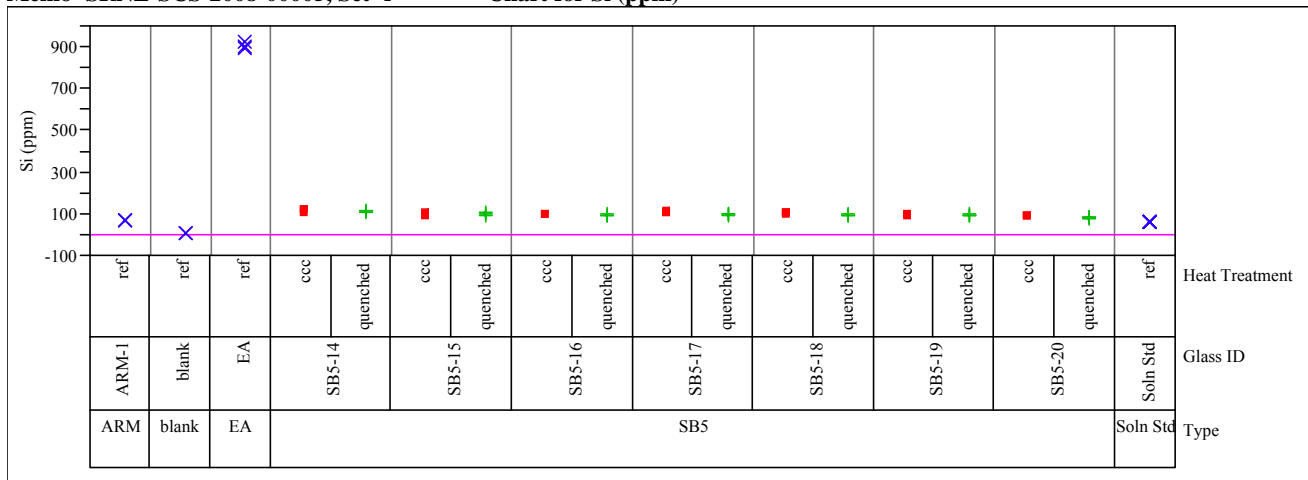
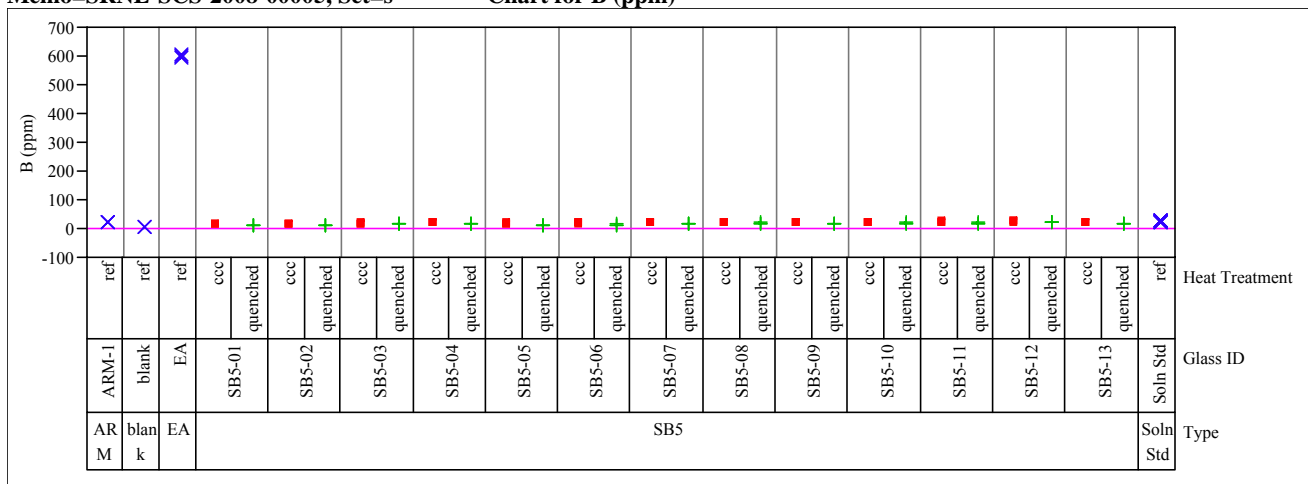


Exhibit B3. Laboratory PCT Measurements by Glass Identifier for Study Glasses and Standards. (continued)

Memo=SRNL-SCS-2008-00005, Set=s

Chart for B (ppm)



Memo=SRNL-SCS-2008-00005, Set=s

Chart for Li (ppm)

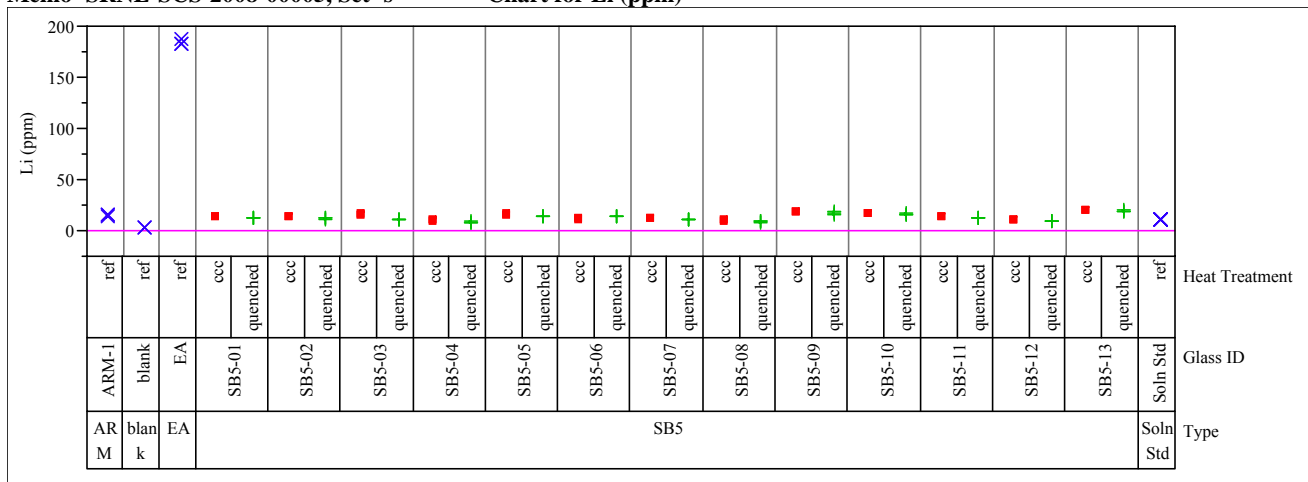
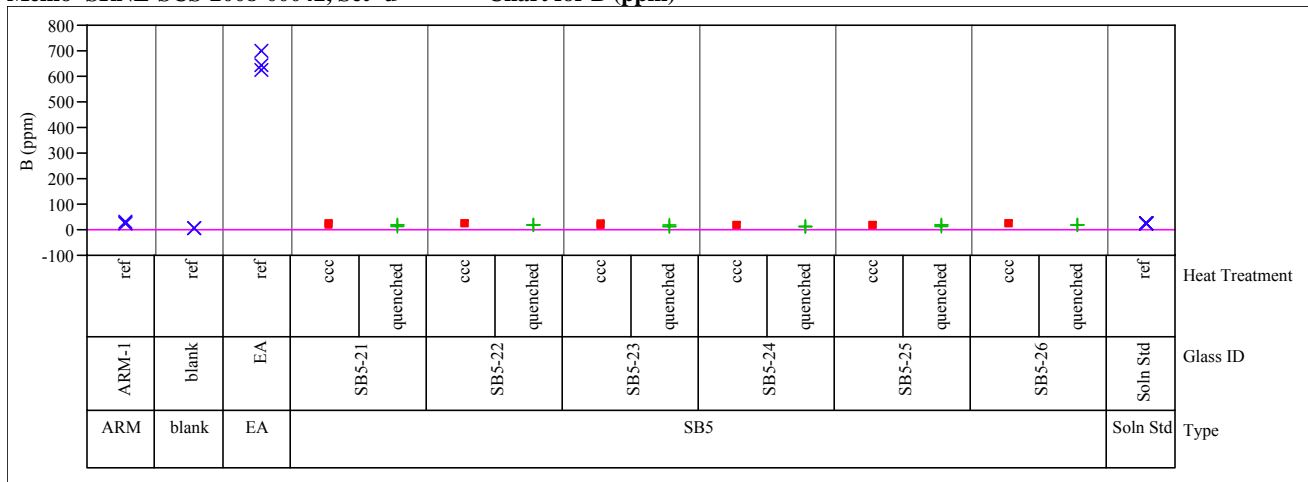


Exhibit B3. Laboratory PCT Measurements by Glass Identifier for Study Glasses and Standards. (continued)

Memo=SRNL-SCS-2008-00042, Set=u

Chart for B (ppm)



Memo=SRNL-SCS-2008-00042, Set=u

Chart for Li (ppm)

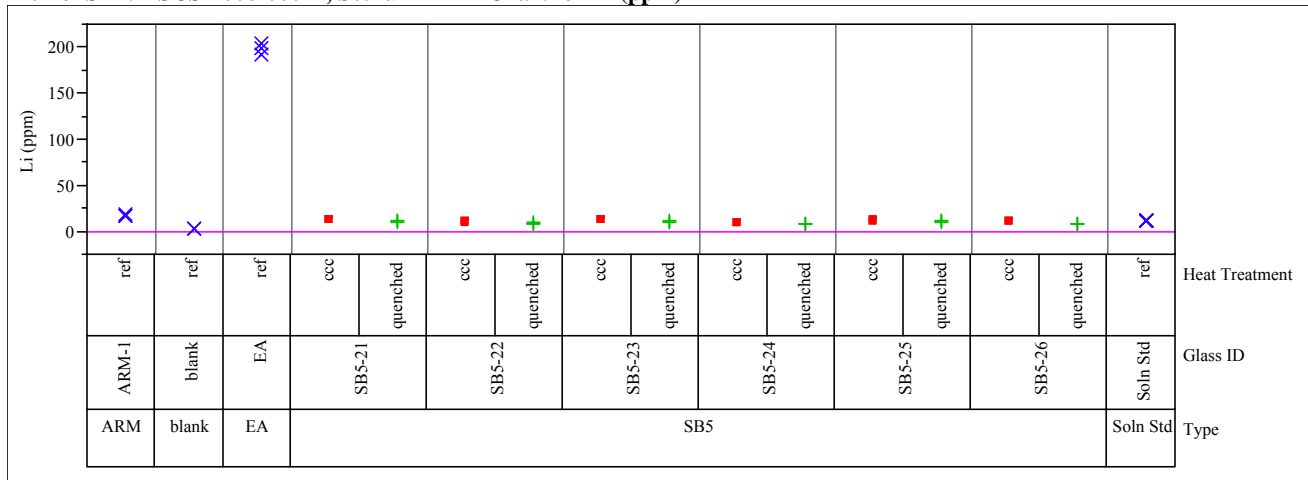
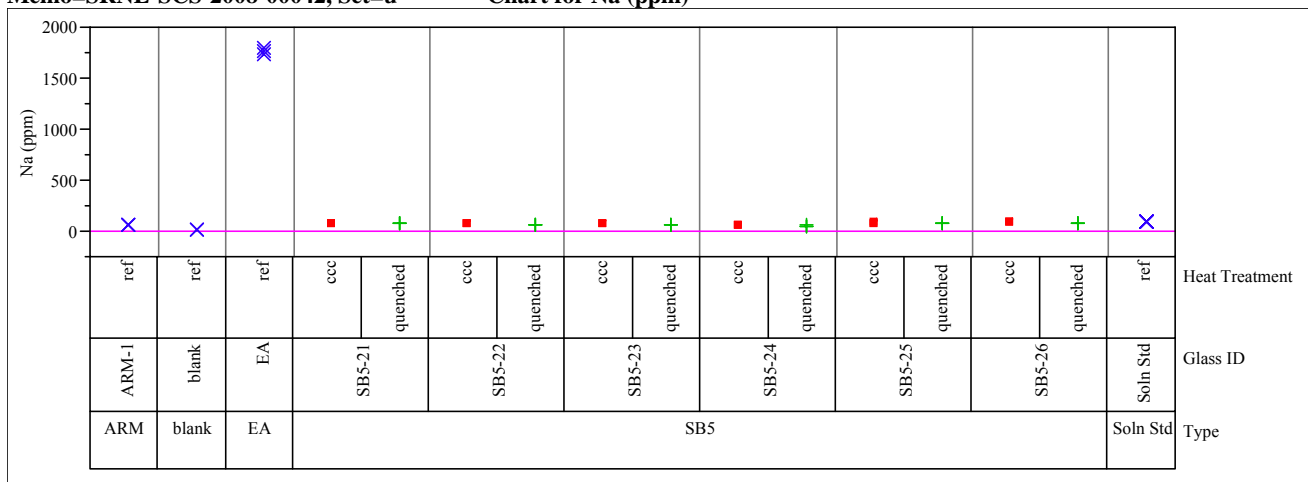


Exhibit B3. Laboratory PCT Measurements by Glass Identifier for Study Glasses and Standards. (continued)

Memo=SRNL-SCS-2008-00042, Set=u

Chart for Na (ppm)



Memo=SRNL-SCS-2008-00042, Set=u

Chart for Si (ppm)

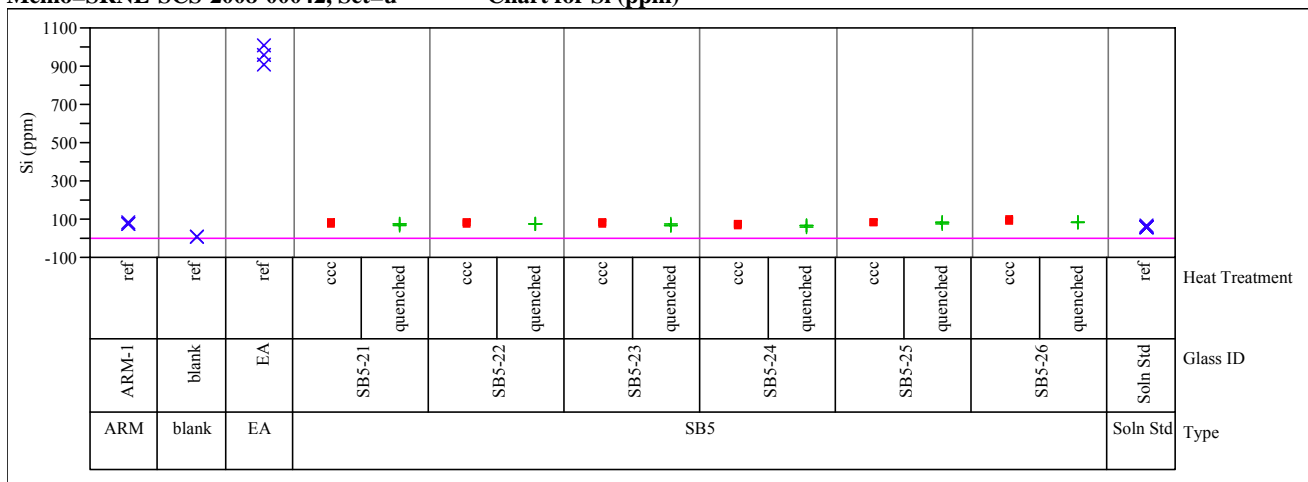


Exhibit B4. Laboratory PCT Measurements by Glass Identifier for Study Glasses.

Chart for B (ppm)

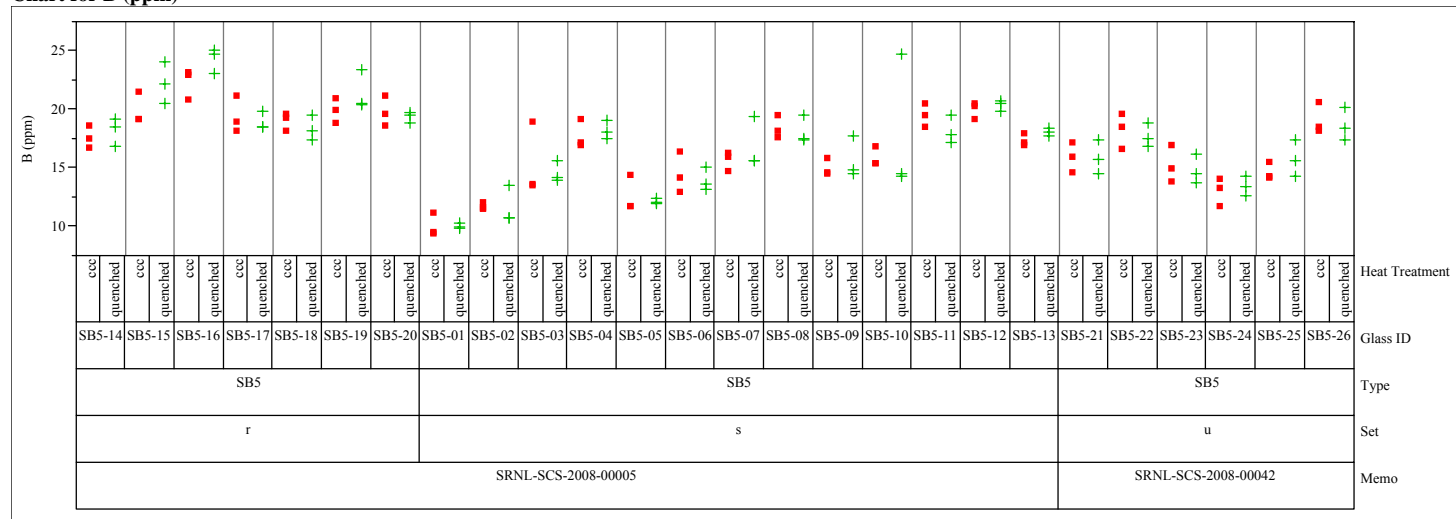


Chart for Li (ppm)

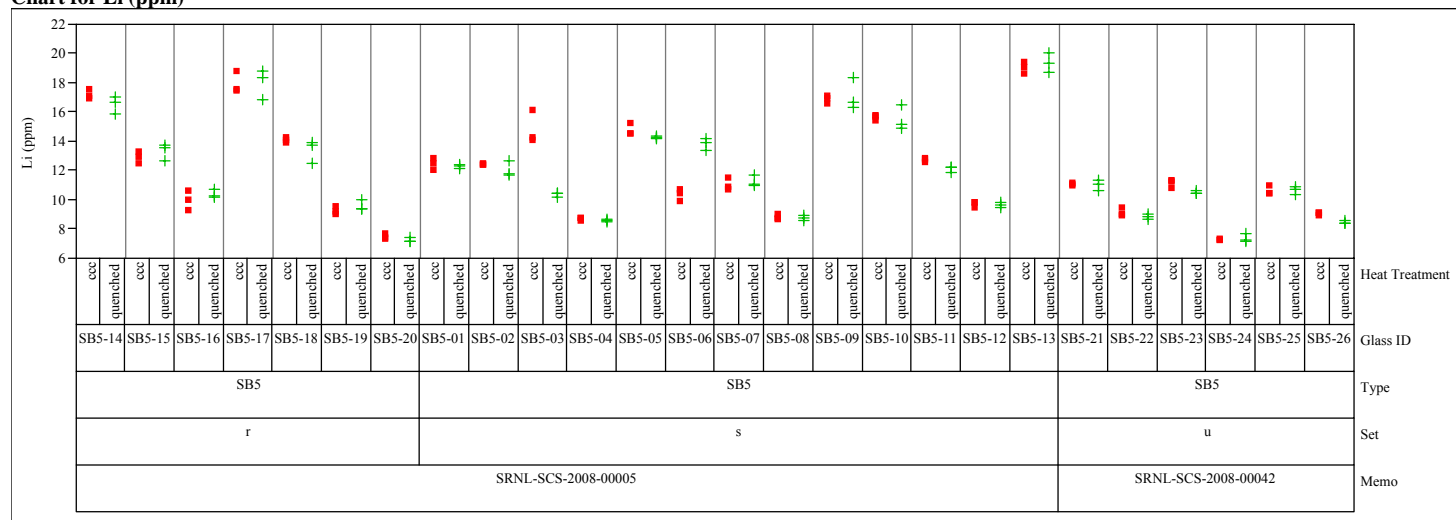


Exhibit B4. Laboratory PCT Measurements by Glass Identifier for Study Glasses. (continued)

Chart for Na (ppm)

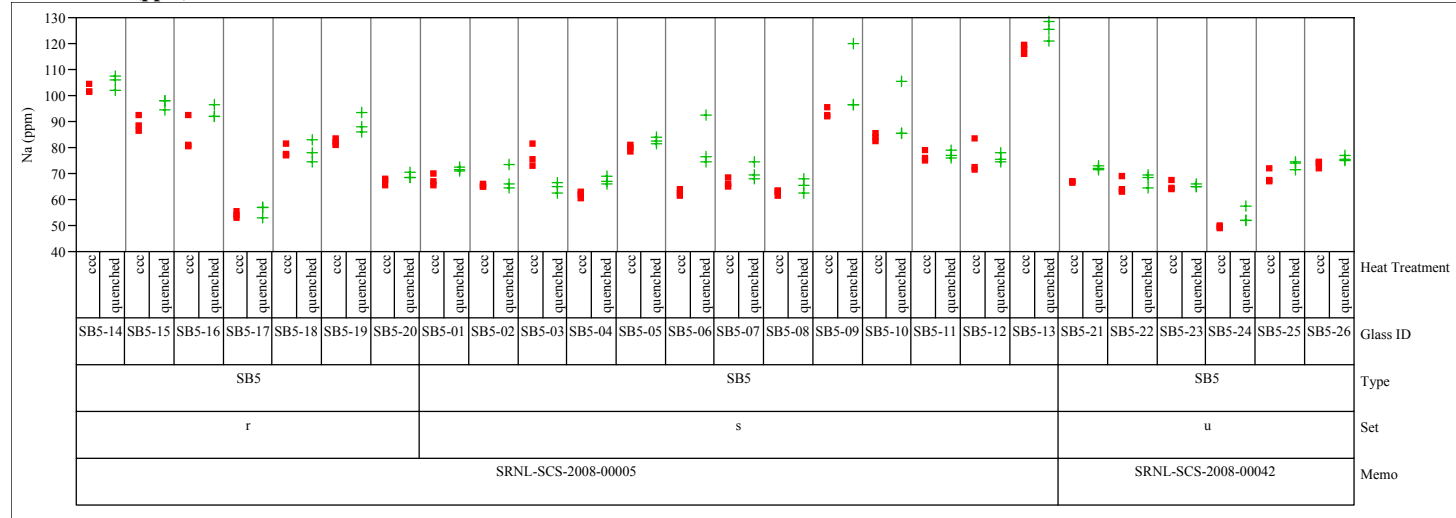
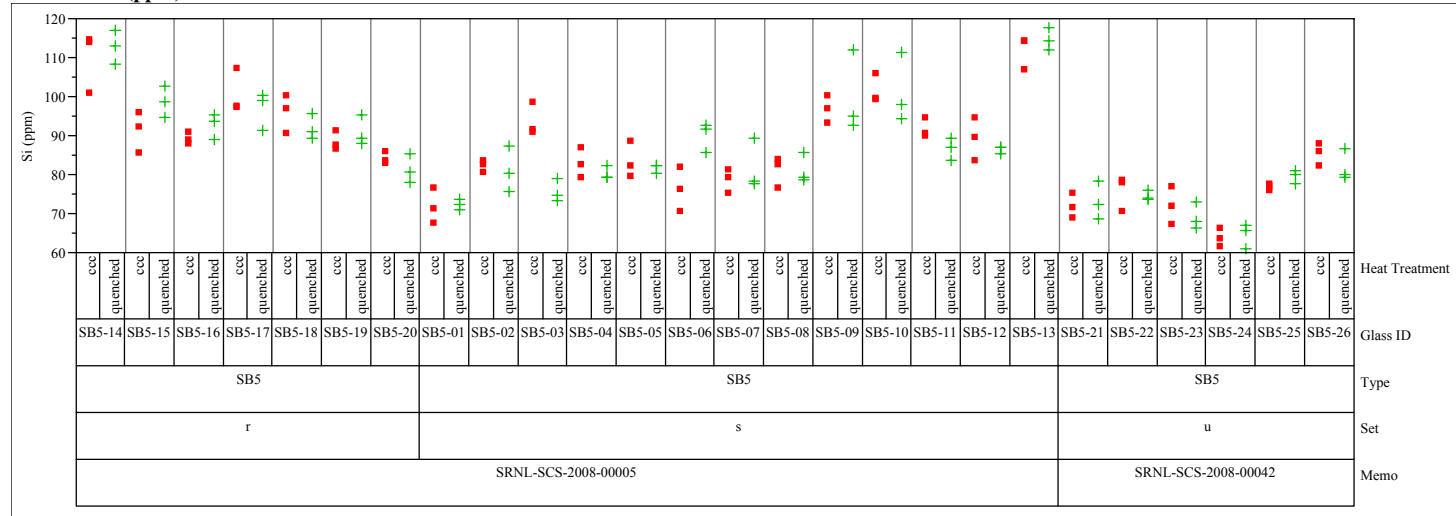


Chart for Si (ppm)



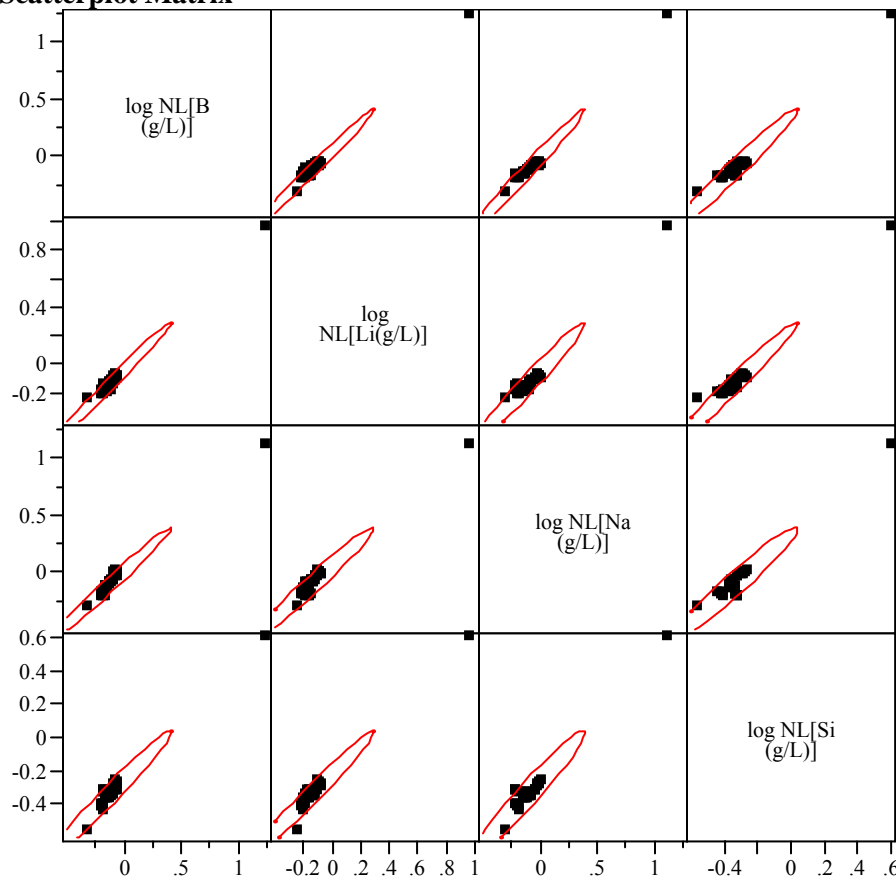
**Exhibit B5. Correlations and Scatter Plots of Normalized PCTs
Over All Compositional Views and Heat Treatments.**

Multivariate, Analytical Plan=SRNL-SCS-2008-00005, Set=r

Correlations

	log NL[B (g/L)]	log NL[Li(g/L)]	log NL[Na (g/L)]	log NL[Si (g/L)]
log NL[B (g/L)]	1.0000	0.9914	0.9871	0.9793
log NL[Li(g/L)]	0.9914	1.0000	0.9779	0.9811
log NL[Na (g/L)]	0.9871	0.9779	1.0000	0.9642
log NL[Si (g/L)]	0.9793	0.9811	0.9642	1.0000

Scatterplot Matrix



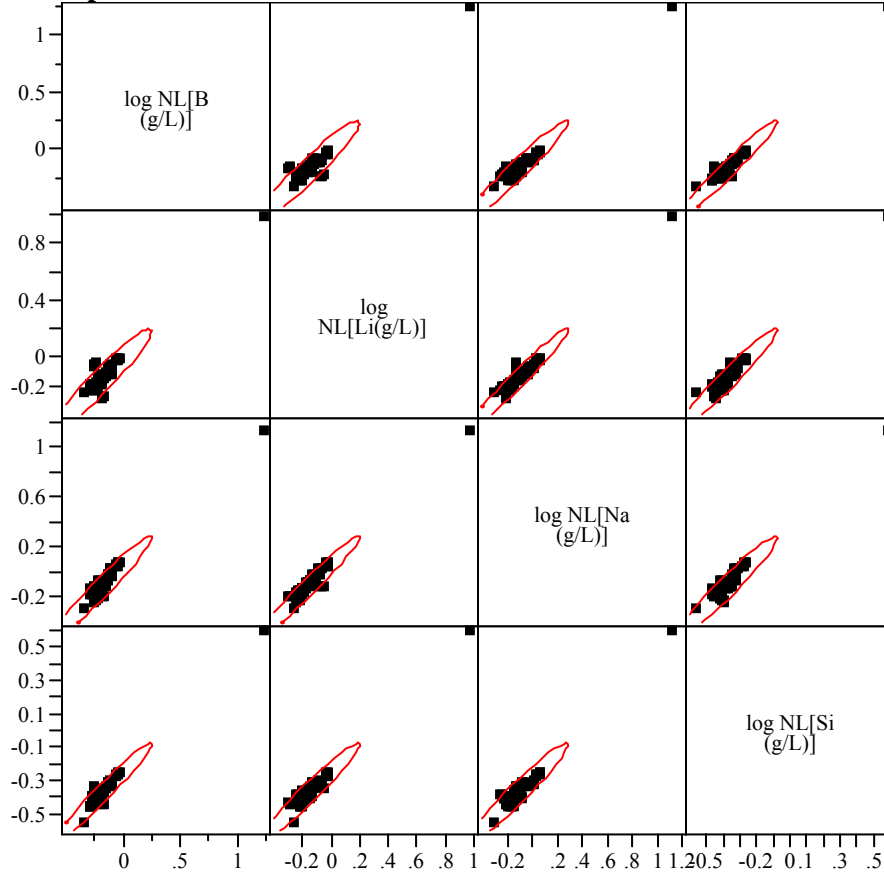
**Exhibit B5. Correlations and Scatter Plots of Normalized PCTs
Over All Compositional Views and Heat Treatments. (continued)**

Multivariate, Analytical Plan=SRNL-SCS-2008-00005, Set=s

Correlations

	log NL[B (g/L)]	log NL[Li(g/L)]	log NL[Na (g/L)]	log NL[Si (g/L)]
log NL[B (g/L)]	1.0000	0.9502	0.9669	0.9756
log NL[Li(g/L)]	0.9502	1.0000	0.9763	0.9680
log NL[Na (g/L)]	0.9669	0.9763	1.0000	0.9634
log NL[Si (g/L)]	0.9756	0.9680	0.9634	1.0000

Scatterplot Matrix



**Exhibit B5. Correlations and Scatter Plots of Normalized PCTs
Over All Compositional Views and Heat Treatments. (continued)**

Multivariate, Analytical Plan=SRNL-SCS-2008-00042, Set=u

Correlations

	log NL[B (g/L)]	log NL[Li(g/L)]	log NL[Na (g/L)]	log NL[Si (g/L)]
log NL[B (g/L)]	1.0000	0.9962	0.9944	0.9916
log NL[Li(g/L)]	0.9962	1.0000	0.9917	0.9847
log NL[Na (g/L)]	0.9944	0.9917	1.0000	0.9877
log NL[Si (g/L)]	0.9916	0.9847	0.9877	1.0000

Scatterplot Matrix

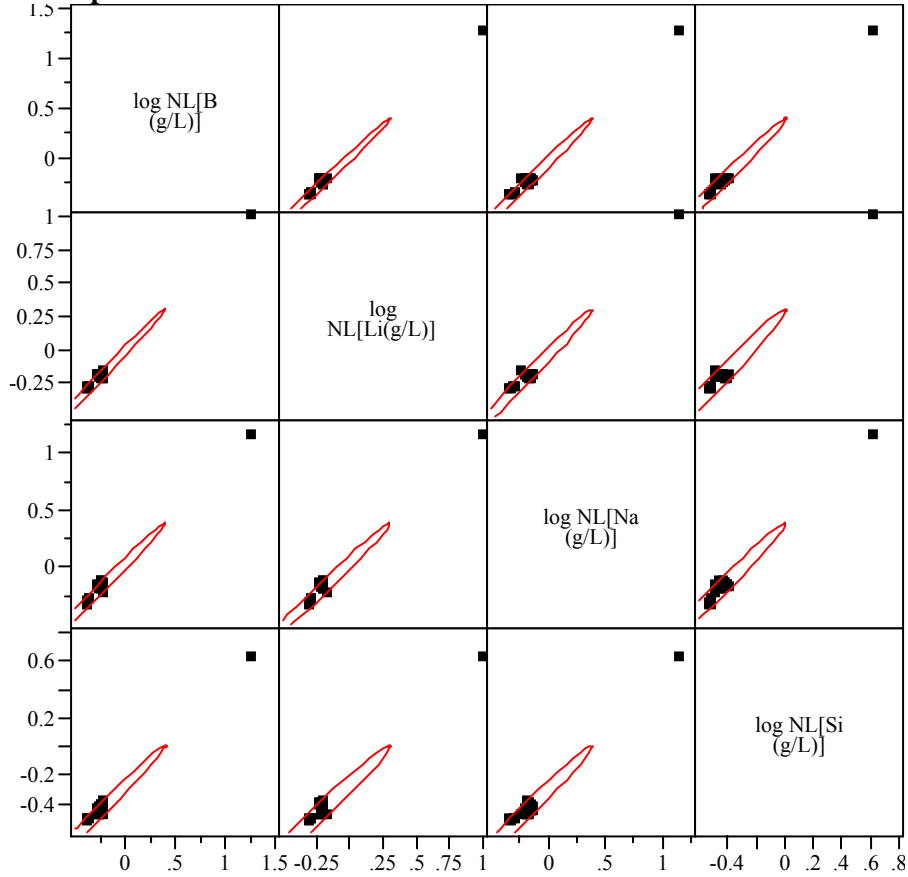
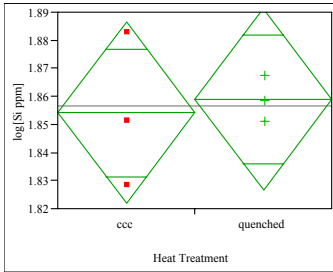


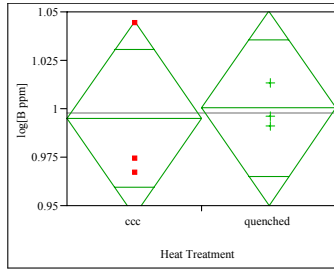
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses.

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-01



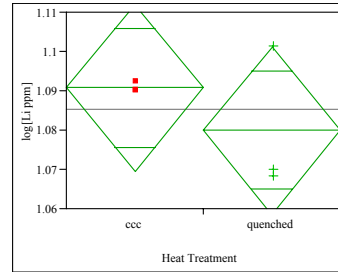
Difference	0.00489	t Ratio	0.297014
Std Err Dif	0.01646	DF	4
Upper CL Dif	0.05058	Prob > t	0.7812
Lower CL Dif	-0.04080	Prob > t	0.3906
Confidence	0.95	Prob < t	0.6094

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-01



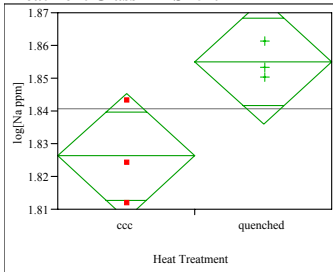
Difference	0.00543	t Ratio	0.212775
Std Err Dif	0.02553	DF	4
Upper CL Dif	0.07630	Prob > t	0.8419
Lower CL Dif	-0.06544	Prob > t	0.4210
Confidence	0.95	Prob < t	0.5790

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-02



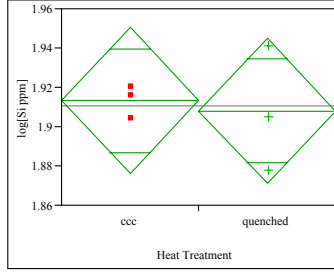
Difference	-0.01077	t Ratio	-0.99356
Std Err Dif	0.01084	DF	4
Upper CL Dif	0.01933	Prob > t	0.3767
Lower CL Dif	-0.04088	Prob > t	0.8117
Confidence	0.95	Prob < t	0.1883

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-01



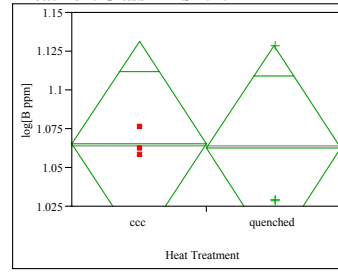
Difference	0.028711	t Ratio	2.968021
Std Err Dif	0.009673	DF	4
Upper CL Dif	0.055569	Prob > t	0.0412
Lower CL Dif	0.001853	Prob > t	0.0206
Confidence	0.95	Prob < t	0.9794

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-02



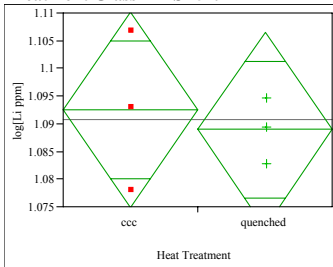
Difference	-0.00517	t Ratio	-0.27289
Std Err Dif	0.01893	DF	4
Upper CL Dif	0.04739	Prob > t	0.7984
Lower CL Dif	-0.05772	Prob > t	0.6008
Confidence	0.95	Prob < t	0.3992

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-02



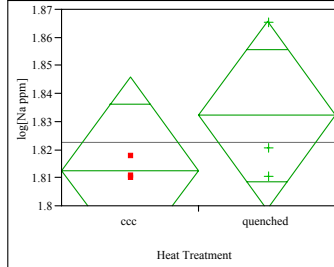
Difference	-0.00274	t Ratio	-0.08147
Std Err Dif	0.03367	DF	4
Upper CL Dif	0.09073	Prob > t	0.9390
Lower CL Dif	-0.09621	Prob > t	0.5305
Confidence	0.95	Prob < t	0.4695

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-01



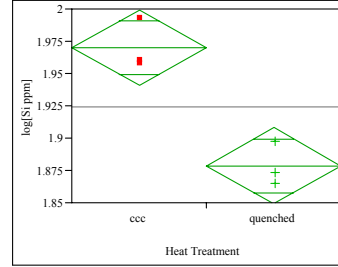
Difference	-0.00359	t Ratio	-0.40075
Std Err Dif	0.00895	DF	4
Upper CL Dif	0.02127	Prob > t	0.7091
Lower CL Dif	-0.02845	Prob > t	0.6455
Confidence	0.95	Prob < t	0.3545

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-02



Difference	0.01968	t Ratio	1.159619
Std Err Dif	0.01697	DF	4
Upper CL Dif	0.06679	Prob > t	0.3107
Lower CL Dif	-0.02744	Prob > t	0.1554
Confidence	0.95	Prob < t	0.8446

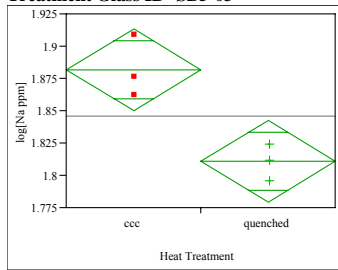
Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-03



Difference	-0.09131	t Ratio	-6.0986
Std Err Dif	0.01497	DF	4
Upper CL Dif	-0.04974	Prob > t	0.0037
Lower CL Dif	-0.13288	Prob > t	0.9982
Confidence	0.95	Prob < t	0.0018

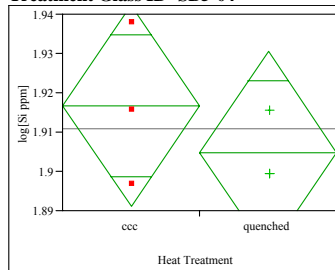
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-03



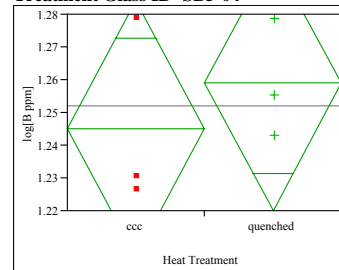
Difference -0.07142 t Ratio -4.4301
 Std Err Dif 0.01612 DF 4
 Upper CL Dif -0.02666 Prob > |t| 0.0114
 Lower CL Dif -0.11618 Prob > t 0.9943
 Confidence 0.95 Prob < t 0.0057

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-04



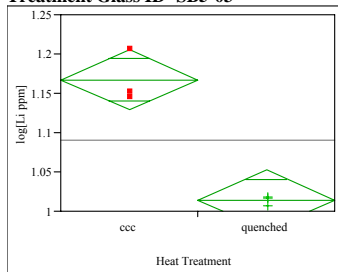
Difference -0.01188 t Ratio -0.91075
 Std Err Dif 0.01305 DF 4
 Upper CL Dif 0.02434 Prob > |t| 0.4139
 Lower CL Dif -0.04811 Prob > t 0.7930
 Confidence 0.95 Prob < t 0.2070

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-04



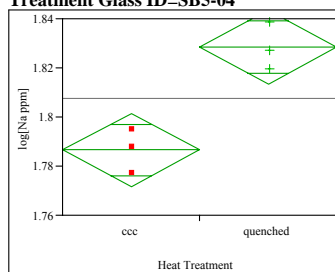
Difference 0.01390 t Ratio 0.700064
 Std Err Dif 0.01985 DF 4
 Upper CL Dif 0.06901 Prob > |t| 0.5225
 Lower CL Dif -0.04122 Prob > t 0.2612
 Confidence 0.95 Prob < t 0.7388

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-03



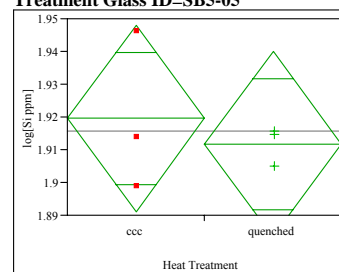
Difference -0.15298 t Ratio -7.88358
 Std Err Dif 0.01940 DF 4
 Upper CL Dif -0.09910 Prob > |t| 0.0014
 Lower CL Dif -0.20685 Prob > t 0.9993
 Confidence 0.95 Prob < t 0.0007

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-04



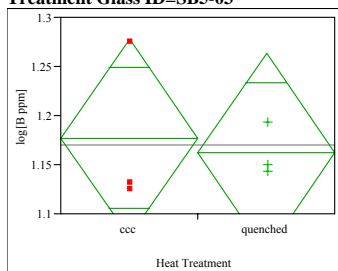
Difference 0.042062 t Ratio 5.511507
 Std Err Dif 0.007632 DF 4
 Upper CL Dif 0.063251 Prob > |t| 0.0053
 Lower CL Dif 0.020873 Prob > t 0.0026
 Confidence 0.95 Prob < t 0.9974

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-05



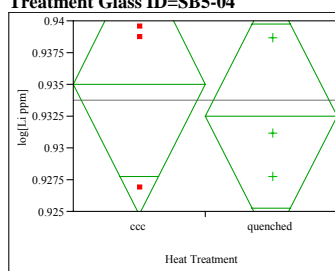
Difference -0.00777 t Ratio -0.53825
 Std Err Dif 0.01444 DF 4
 Upper CL Dif 0.03231 Prob > |t| 0.6190
 Lower CL Dif -0.04786 Prob > t 0.6905
 Confidence 0.95 Prob < t 0.3095

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-03



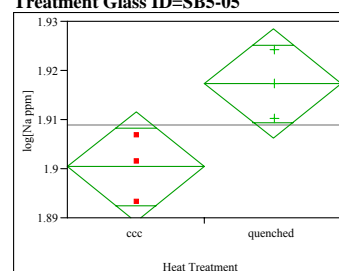
Difference -0.01463 t Ratio -0.28397
 Std Err Dif 0.05152 DF 4
 Upper CL Dif 0.12841 Prob > |t| 0.7905
 Lower CL Dif -0.15766 Prob > t 0.6047
 Confidence 0.95 Prob < t 0.3953

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-04



Difference -0.00251 t Ratio -0.48188
 Std Err Dif 0.00522 DF 4
 Upper CL Dif 0.01198 Prob > |t| 0.6551
 Lower CL Dif -0.01701 Prob > t 0.6725
 Confidence 0.95 Prob < t 0.3275

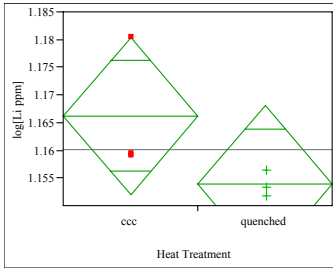
Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-05



Difference 0.016962 t Ratio 2.99099
 Std Err Dif 0.005671 DF 4
 Upper CL Dif 0.032707 Prob > |t| 0.0403
 Lower CL Dif 0.001217 Prob > t 0.0201
 Confidence 0.95 Prob < t 0.9799

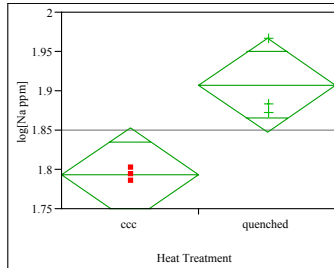
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-05



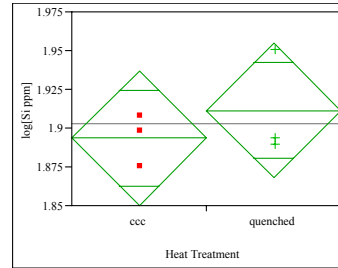
Difference -0.01240 t Ratio -1.71651
 Std Err Dif 0.00723 DF 4
 Upper CL Dif 0.00766 Prob > |t| 0.1612
 Lower CL Dif -0.03247 Prob > t 0.9194
 Confidence 0.95 Prob < t 0.0806

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-06



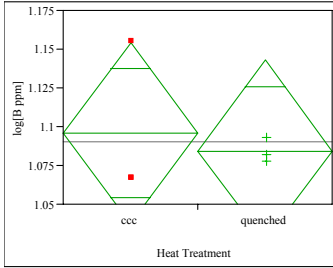
Difference 0.114543 t Ratio 3.766948
 Std Err Dif 0.030407 DF 4
 Upper CL Dif 0.198967 Prob > |t| 0.0197
 Lower CL Dif 0.030119 Prob > t 0.0098
 Confidence 0.95 Prob < t 0.9902

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-07



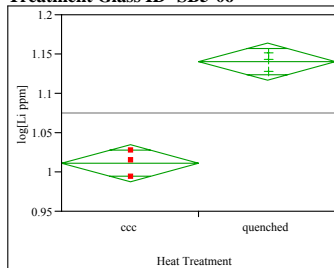
Difference 0.01799 t Ratio 0.815997
 Std Err Dif 0.02205 DF 4
 Upper CL Dif 0.07922 Prob > |t| 0.4603
 Lower CL Dif -0.04323 Prob > t 0.2302
 Confidence 0.95 Prob < t 0.7698

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-05



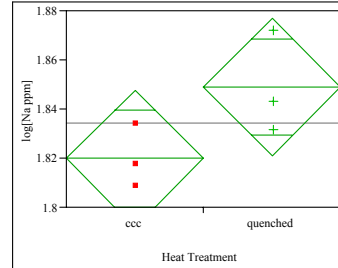
Difference -0.01149 t Ratio -0.38533
 Std Err Dif 0.02983 DF 4
 Upper CL Dif 0.07133 Prob > |t| 0.7196
 Lower CL Dif -0.09432 Prob > t 0.6402
 Confidence 0.95 Prob < t 0.3598

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-06



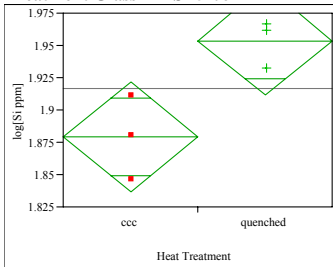
Difference 0.129319 t Ratio 10.64161
 Std Err Dif 0.012152 DF 4
 Upper CL Dif 0.163059 Prob > |t| 0.0004
 Lower CL Dif 0.095579 Prob > t 0.0002
 Confidence 0.95 Prob < t 0.9998

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-07



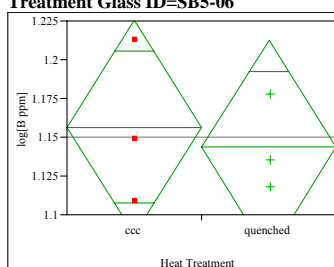
Difference 0.02909 t Ratio 2.052782
 Std Err Dif 0.01417 DF 4
 Upper CL Dif 0.06844 Prob > |t| 0.1093
 Lower CL Dif -0.01026 Prob > t 0.0547
 Confidence 0.95 Prob < t 0.9453

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-06



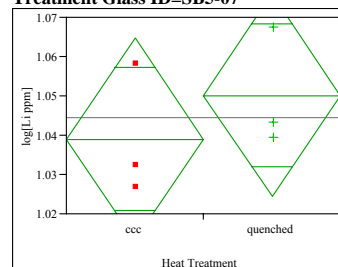
Difference 0.074669 t Ratio 3.465181
 Std Err Dif 0.021548 DF 4
 Upper CL Dif 0.134497 Prob > |t| 0.0257
 Lower CL Dif 0.014841 Prob > t 0.0128
 Confidence 0.95 Prob < t 0.9872

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-06



Difference -0.01306 t Ratio -0.37145
 Std Err Dif 0.03516 DF 4
 Upper CL Dif 0.08457 Prob > |t| 0.7291
 Lower CL Dif -0.11069 Prob > t 0.6354
 Confidence 0.95 Prob < t 0.3646

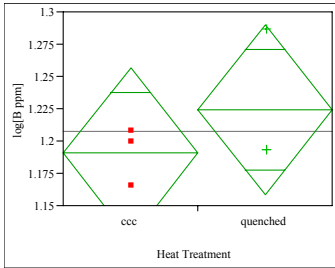
Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-07



Difference 0.01114 t Ratio 0.849332
 Std Err Dif 0.01312 DF 4
 Upper CL Dif 0.04756 Prob > |t| 0.4435
 Lower CL Dif -0.02528 Prob > t 0.2218
 Confidence 0.95 Prob < t 0.7782

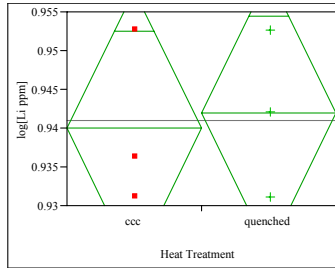
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-07



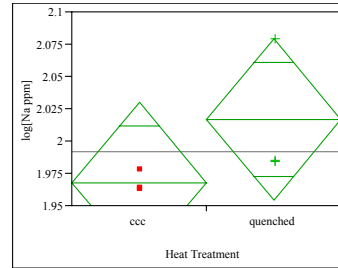
Difference 0.03378 t Ratio 1.004164
 Std Err Dif 0.03364 DF 4
 Upper CL Dif 0.12717 Prob > |t| 0.3721
 Lower CL Dif -0.05961 Prob > t 0.1861
 Confidence 0.95 Prob < t 0.8139

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-08



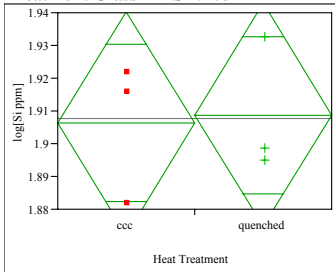
Difference 0.00194 t Ratio 0.21626
 Std Err Dif 0.00899 DF 4
 Upper CL Dif 0.02689 Prob > |t| 0.8394
 Lower CL Dif -0.02300 Prob > t 0.4197
 Confidence 0.95 Prob < t 0.5803

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-09



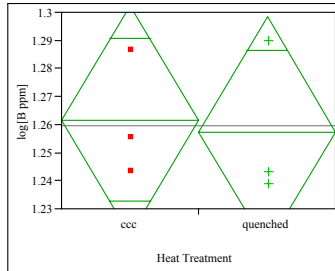
Difference 0.04868 t Ratio 1.529507
 Std Err Dif 0.03183 DF 4
 Upper CL Dif 0.13706 Prob > |t| 0.2009
 Lower CL Dif -0.03969 Prob > t 0.1004
 Confidence 0.95 Prob < t 0.8996

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-08



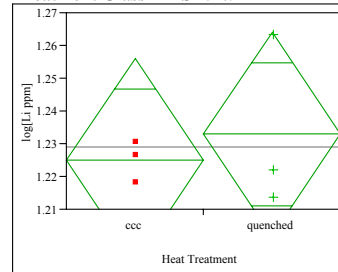
Difference 0.00240 t Ratio 0.138479
 Std Err Dif 0.01732 DF 4
 Upper CL Dif 0.05050 Prob > |t| 0.8966
 Lower CL Dif -0.04570 Prob > t 0.4483
 Confidence 0.95 Prob < t 0.5517

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-08



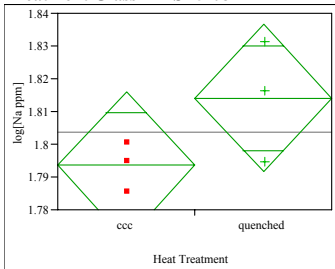
Difference -0.00422 t Ratio -0.20241
 Std Err Dif 0.02085 DF 4
 Upper CL Dif 0.05368 Prob > |t| 0.8495
 Lower CL Dif -0.06212 Prob > t 0.5753
 Confidence 0.95 Prob < t 0.4247

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-09



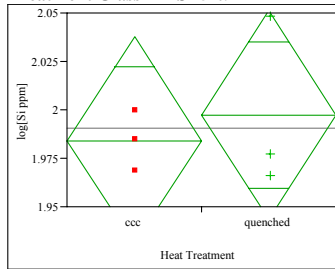
Difference 0.00802 t Ratio 0.507454
 Std Err Dif 0.01581 DF 4
 Upper CL Dif 0.05191 Prob > |t| 0.6385
 Lower CL Dif -0.03587 Prob > t 0.3193
 Confidence 0.95 Prob < t 0.6807

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-08



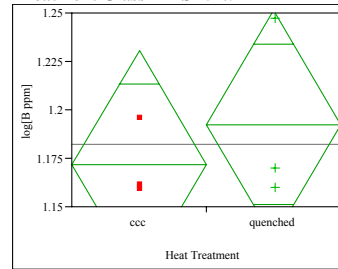
Difference 0.02062 t Ratio 1.788163
 Std Err Dif 0.01153 DF 4
 Upper CL Dif 0.05264 Prob > |t| 0.1483
 Lower CL Dif -0.01140 Prob > t 0.0741
 Confidence 0.95 Prob < t 0.9259

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-09



Difference 0.01313 t Ratio 0.480079
 Std Err Dif 0.02735 DF 4
 Upper CL Dif 0.08906 Prob > |t| 0.6562
 Lower CL Dif -0.06280 Prob > t 0.3281
 Confidence 0.95 Prob < t 0.6719

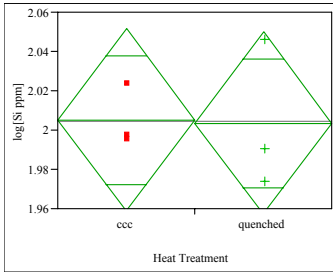
Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-09



Difference 0.02054 t Ratio 0.68577
 Std Err Dif 0.02995 DF 4
 Upper CL Dif 0.10369 Prob > |t| 0.5305
 Lower CL Dif -0.06261 Prob > t 0.2653
 Confidence 0.95 Prob < t 0.7347

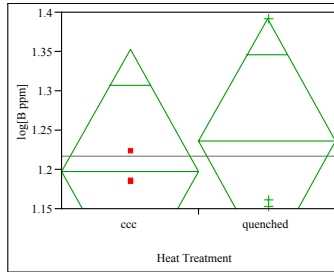
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-10



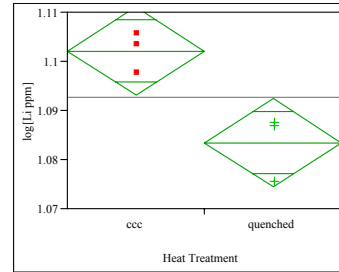
Difference -0.00163 t Ratio -0.06904
 Std Err Dif 0.02362 DF 4
 Upper CL Dif 0.06395 Prob > |t| 0.9483
 Lower CL Dif -0.06721 Prob > t 0.5259
 Confidence 0.95 Prob < t 0.4741

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-10



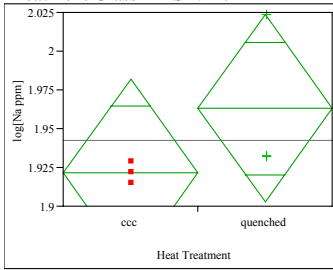
Difference 0.03851 t Ratio 0.485266
 Std Err Dif 0.07936 DF 4
 Upper CL Dif 0.25884 Prob > |t| 0.6529
 Lower CL Dif -0.18182 Prob > t 0.3264
 Confidence 0.95 Prob < t 0.6736

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-11



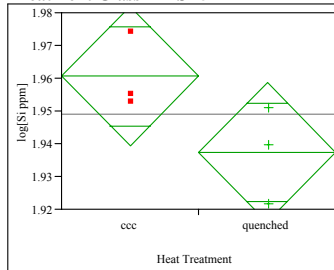
Difference -0.01873 t Ratio -4.09291
 Std Err Dif 0.00458 DF 4
 Upper CL Dif -0.00602 Prob > |t| 0.0149
 Lower CL Dif -0.03143 Prob > t 0.9925
 Confidence 0.95 Prob < t 0.0075

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-10



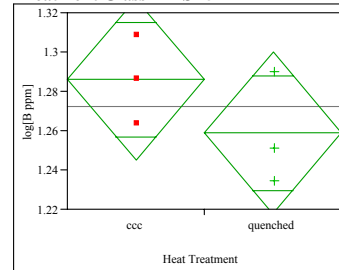
Difference 0.04126 t Ratio 1.340392
 Std Err Dif 0.03078 DF 4
 Upper CL Dif 0.12671 Prob > |t| 0.2512
 Lower CL Dif -0.04420 Prob > t 0.1256
 Confidence 0.95 Prob < t 0.8744

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-11



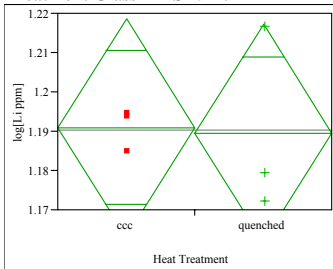
Difference -0.02312 t Ratio -2.12839
 Std Err Dif 0.01086 DF 4
 Upper CL Dif 0.00704 Prob > |t| 0.1004
 Lower CL Dif -0.05328 Prob > t 0.9498
 Confidence 0.95 Prob < t 0.0502

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-11



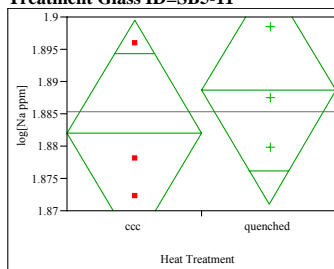
Difference -0.02727 t Ratio -1.30352
 Std Err Dif 0.02092 DF 4
 Upper CL Dif 0.03081 Prob > |t| 0.2624
 Lower CL Dif -0.08535 Prob > t 0.8688
 Confidence 0.95 Prob < t 0.1312

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-10



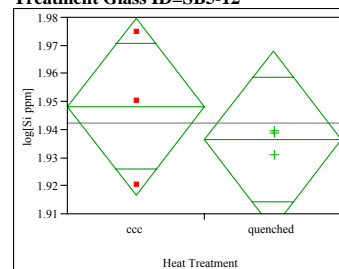
Difference -0.00151 t Ratio -0.10681
 Std Err Dif 0.01410 DF 4
 Upper CL Dif 0.03765 Prob > |t| 0.9201
 Lower CL Dif -0.04066 Prob > t 0.5400
 Confidence 0.95 Prob < t 0.4600

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-11



Difference 0.00665 t Ratio 0.742969
 Std Err Dif 0.00895 DF 4
 Upper CL Dif 0.03148 Prob > |t| 0.4988
 Lower CL Dif -0.01819 Prob > t 0.2494
 Confidence 0.95 Prob < t 0.7506

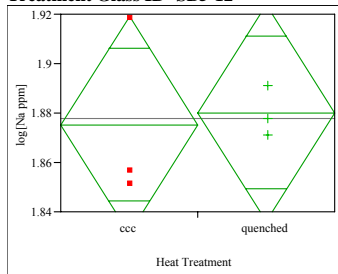
Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-12



Difference -0.01183 t Ratio -0.73719
 Std Err Dif 0.01605 DF 4
 Upper CL Dif 0.03273 Prob > |t| 0.5019
 Lower CL Dif -0.05639 Prob > t 0.7490
 Confidence 0.95 Prob < t 0.2510

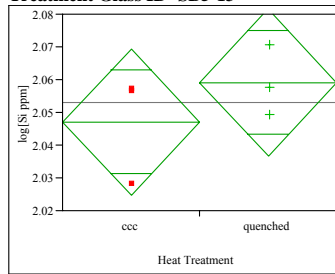
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-12



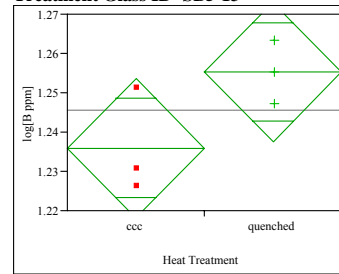
Difference	0.00484	t Ratio	0.216779
Std Err Dif	0.02231	DF	4
Upper CL Dif	0.06677	Prob > t	0.8390
Lower CL Dif	-0.05710	Prob > t	0.4195
Confidence	0.95	Prob < t	0.5805

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-13



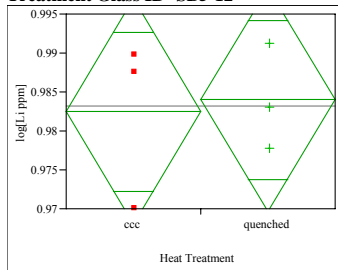
Difference	0.01207	t Ratio	1.06025
Std Err Dif	0.01138	DF	4
Upper CL Dif	0.04367	Prob > t	0.3488
Lower CL Dif	-0.01954	Prob > t	0.1744
Confidence	0.95	Prob < t	0.8256

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-13



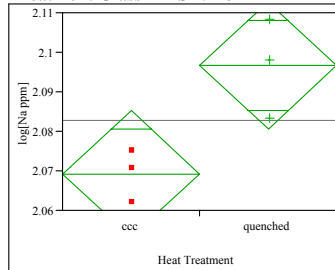
Difference	0.01927	t Ratio	2.135096
Std Err Dif	0.00903	DF	4
Upper CL Dif	0.04433	Prob > t	0.0996
Lower CL Dif	-0.00579	Prob > t	0.0498
Confidence	0.95	Prob < t	0.9502

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-12



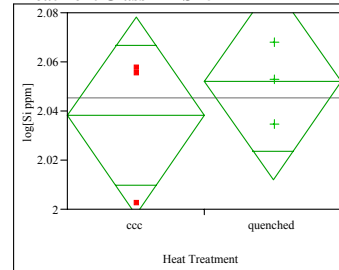
Difference	0.00156	t Ratio	0.211498
Std Err Dif	0.00737	DF	4
Upper CL Dif	0.02201	Prob > t	0.8428
Lower CL Dif	-0.01889	Prob > t	0.4214
Confidence	0.95	Prob < t	0.5786

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-13



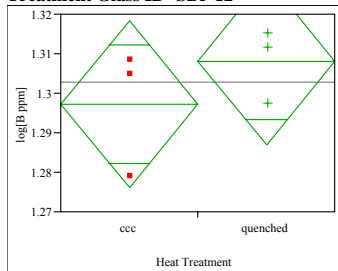
Difference	0.027414	t Ratio	3.348419
Std Err Dif	0.008187	DF	4
Upper CL Dif	0.050146	Prob > t	0.0286
Lower CL Dif	0.004683	Prob > t	0.0143
Confidence	0.95	Prob < t	0.9857

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-14



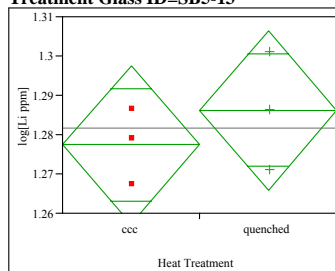
Difference	0.01378	t Ratio	0.672843
Std Err Dif	0.02047	DF	4
Upper CL Dif	0.07062	Prob > t	0.5379
Lower CL Dif	-0.04307	Prob > t	0.2690
Confidence	0.95	Prob < t	0.7310

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-12



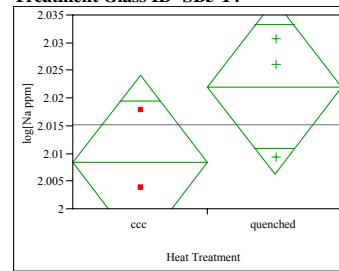
Difference	0.01094	t Ratio	1.015819
Std Err Dif	0.01077	DF	4
Upper CL Dif	0.04085	Prob > t	0.3672
Lower CL Dif	-0.01896	Prob > t	0.1836
Confidence	0.95	Prob < t	0.8164

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-13



Difference	0.00872	t Ratio	0.848185
Std Err Dif	0.01029	DF	4
Upper CL Dif	0.03728	Prob > t	0.4441
Lower CL Dif	-0.01983	Prob > t	0.2221
Confidence	0.95	Prob < t	0.7779

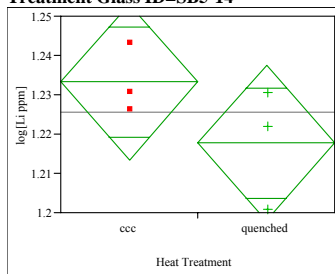
Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-14



Difference	0.01370	t Ratio	1.707279
Std Err Dif	0.00802	DF	4
Upper CL Dif	0.03598	Prob > t	0.1630
Lower CL Dif	-0.00858	Prob > t	0.0815
Confidence	0.95	Prob < t	0.9185

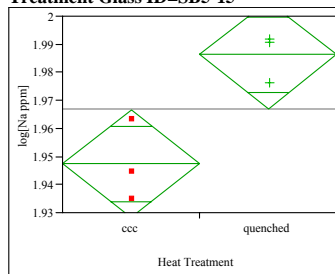
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-14



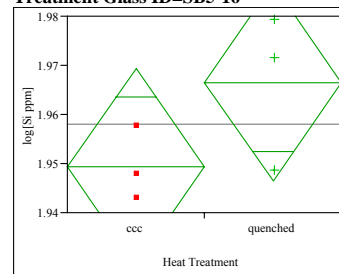
Difference -0.01547 t Ratio -1.52907
 Std Err Dif 0.01012 DF 4
 Upper CL Dif 0.01262 Prob > |t| 0.2010
 Lower CL Dif -0.04357 Prob > t 0.8995
 Confidence 0.95 Prob < t 0.1005

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-15



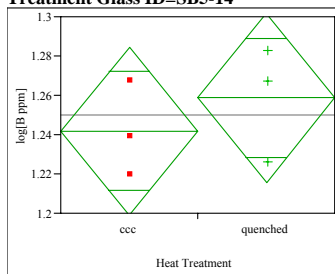
Difference 0.038889 t Ratio 3.989999
 Std Err Dif 0.009747 DF 4
 Upper CL Dif 0.065950 Prob > |t| 0.0163
 Lower CL Dif 0.011828 Prob > t 0.0081
 Confidence 0.95 Prob < t 0.9919

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-16



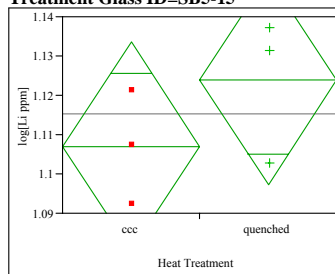
Difference 0.01712 t Ratio 1.684124
 Std Err Dif 0.01017 DF 4
 Upper CL Dif 0.04535 Prob > |t| 0.1674
 Lower CL Dif -0.01110 Prob > t 0.0837
 Confidence 0.95 Prob < t 0.9163

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-14



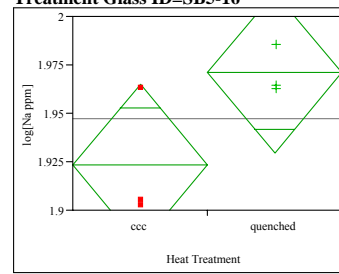
Difference 0.01687 t Ratio 0.772532
 Std Err Dif 0.02183 DF 4
 Upper CL Dif 0.07748 Prob > |t| 0.4829
 Lower CL Dif -0.04375 Prob > t 0.2415
 Confidence 0.95 Prob < t 0.7585

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-15



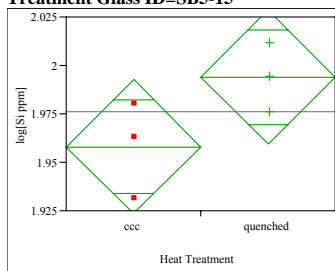
Difference 0.01691 t Ratio 1.247557
 Std Err Dif 0.01355 DF 4
 Upper CL Dif 0.05454 Prob > |t| 0.2802
 Lower CL Dif -0.02072 Prob > t 0.1401
 Confidence 0.95 Prob < t 0.8599

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-16



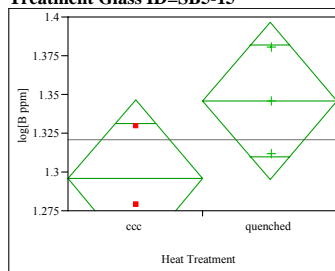
Difference 0.04759 t Ratio 2.256074
 Std Err Dif 0.02109 DF 4
 Upper CL Dif 0.10616 Prob > |t| 0.0871
 Lower CL Dif -0.01098 Prob > t 0.0435
 Confidence 0.95 Prob < t 0.9565

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-15



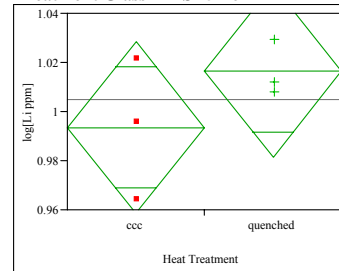
Difference 0.03589 t Ratio 2.042626
 Std Err Dif 0.01757 DF 4
 Upper CL Dif 0.08468 Prob > |t| 0.1106
 Lower CL Dif -0.01289 Prob > t 0.0553
 Confidence 0.95 Prob < t 0.9447

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-15



Difference 0.05037 t Ratio 1.943333
 Std Err Dif 0.02592 DF 4
 Upper CL Dif 0.12233 Prob > |t| 0.1239
 Lower CL Dif -0.02159 Prob > t 0.0620
 Confidence 0.95 Prob < t 0.9380

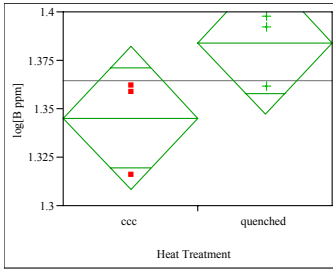
Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-16



Difference 0.02293 t Ratio 1.284185
 Std Err Dif 0.01786 DF 4
 Upper CL Dif 0.07251 Prob > |t| 0.2684
 Lower CL Dif -0.02665 Prob > t 0.1342
 Confidence 0.95 Prob < t 0.8658

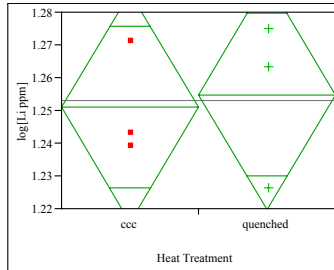
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-16



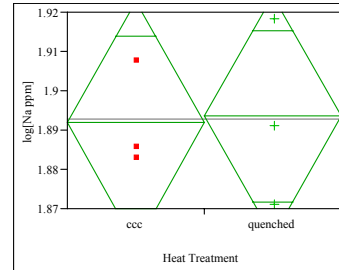
Difference 0.03874 t Ratio 2.068693
 Std Err Dif 0.01873 DF 4
 Upper CL Dif 0.09073 Prob > |t| 0.1074
 Lower CL Dif -0.01325 Prob > t 0.0537
 Confidence 0.95 Prob < t 0.9463

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-17



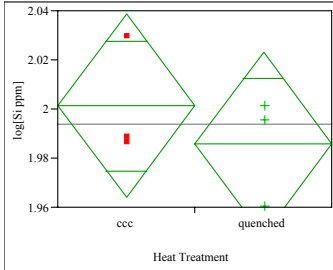
Difference 0.00378 t Ratio 0.212141
 Std Err Dif 0.01784 DF 4
 Upper CL Dif 0.05331 Prob > |t| 0.8424
 Lower CL Dif -0.04574 Prob > t 0.4212
 Confidence 0.95 Prob < t 0.5788

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-18



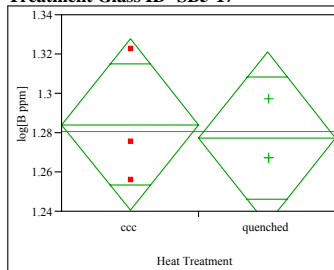
Difference 0.00157 t Ratio 0.099594
 Std Err Dif 0.01573 DF 4
 Upper CL Dif 0.04524 Prob > |t| 0.9255
 Lower CL Dif -0.04211 Prob > t 0.4627
 Confidence 0.95 Prob < t 0.5373

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-17



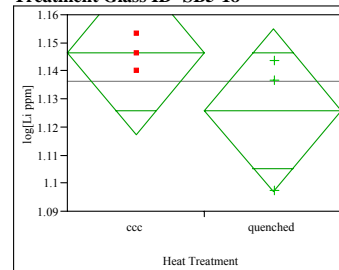
Difference -0.01532 t Ratio -0.80613
 Std Err Dif 0.01900 DF 4
 Upper CL Dif 0.03745 Prob > |t| 0.4654
 Lower CL Dif -0.06809 Prob > t 0.7673
 Confidence 0.95 Prob < t 0.2327

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-17



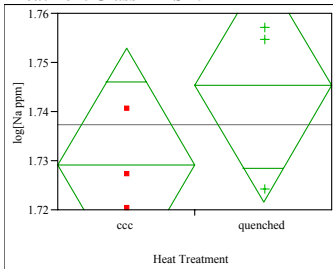
Difference -0.00689 t Ratio -0.30945
 Std Err Dif 0.02228 DF 4
 Upper CL Dif 0.05495 Prob > |t| 0.7724
 Lower CL Dif -0.06874 Prob > t 0.6138
 Confidence 0.95 Prob < t 0.3862

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-18



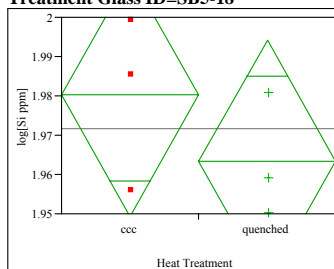
Difference -0.02035 t Ratio -1.37287
 Std Err Dif 0.01483 DF 4
 Upper CL Dif 0.02081 Prob > |t| 0.2417
 Lower CL Dif -0.06152 Prob > t 0.8791
 Confidence 0.95 Prob < t 0.1209

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-17



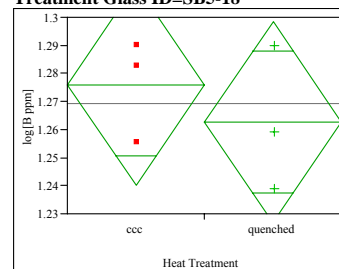
Difference 0.01617 t Ratio 1.334955
 Std Err Dif 0.01211 DF 4
 Upper CL Dif 0.04979 Prob > |t| 0.2528
 Lower CL Dif -0.01746 Prob > t 0.1264
 Confidence 0.95 Prob < t 0.8736

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-18



Difference -0.01680 t Ratio -1.0706
 Std Err Dif 0.01569 DF 4
 Upper CL Dif 0.02677 Prob > |t| 0.3446
 Lower CL Dif -0.06036 Prob > t 0.8277
 Confidence 0.95 Prob < t 0.1723

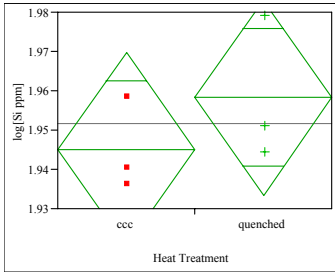
Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-18



Difference -0.01322 t Ratio -0.72491
 Std Err Dif 0.01824 DF 4
 Upper CL Dif 0.03741 Prob > |t| 0.5086
 Lower CL Dif -0.06386 Prob > t 0.7457
 Confidence 0.95 Prob < t 0.2543

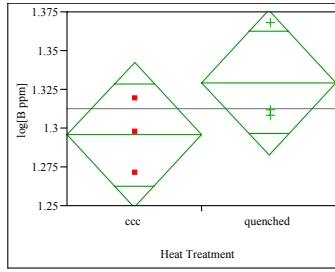
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-19



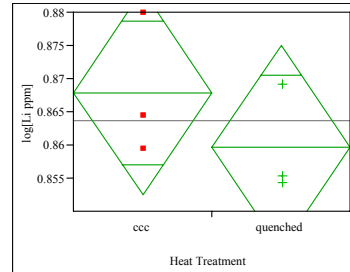
Difference 0.01332 t Ratio 1.054568
 Std Err Dif 0.01263 DF 4
 Upper CL Dif 0.04840 Prob > |t| 0.3511
 Lower CL Dif -0.02175 Prob > t 0.1756
 Confidence 0.95 Prob < t 0.8244

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-19



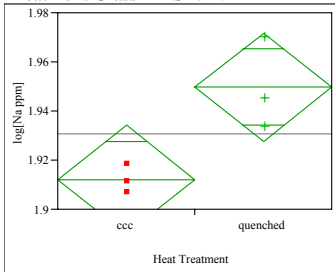
Difference 0.03357 t Ratio 1.412416
 Std Err Dif 0.02377 DF 4
 Upper CL Dif 0.09957 Prob > |t| 0.2307
 Lower CL Dif -0.03242 Prob > t 0.1153
 Confidence 0.95 Prob < t 0.8847

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-20



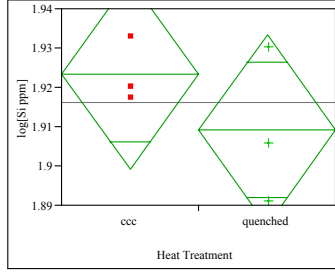
Difference -0.00822 t Ratio -1.04899
 Std Err Dif 0.00784 DF 4
 Upper CL Dif 0.01353 Prob > |t| 0.3534
 Lower CL Dif -0.02997 Prob > t 0.8233
 Confidence 0.95 Prob < t 0.1767

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-19



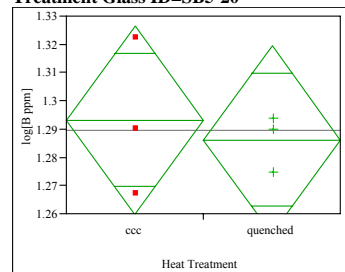
Difference 0.037647 t Ratio 3.350126
 Std Err Dif 0.011237 DF 4
 Upper CL Dif 0.068847 Prob > |t| 0.0286
 Lower CL Dif 0.006447 Prob > t 0.0143
 Confidence 0.95 Prob < t 0.9857

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-20



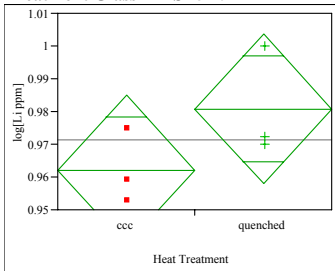
Difference -0.01429 t Ratio -1.155
 Std Err Dif 0.01237 DF 4
 Upper CL Dif 0.02006 Prob > |t| 0.3124
 Lower CL Dif -0.04863 Prob > t 0.8438
 Confidence 0.95 Prob < t 0.1562

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-20



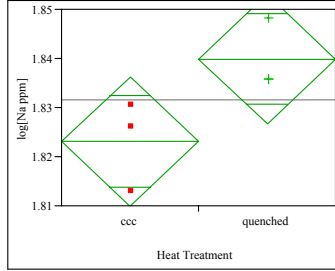
Difference -0.00691 t Ratio -0.40723
 Std Err Dif 0.01697 DF 4
 Upper CL Dif 0.04021 Prob > |t| 0.7047
 Lower CL Dif -0.05403 Prob > t 0.6477
 Confidence 0.95 Prob < t 0.3523

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-19



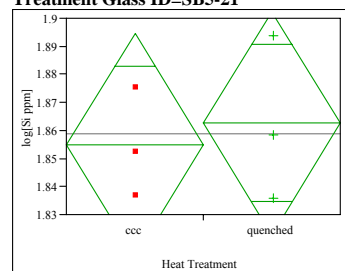
Difference 0.01869 t Ratio 1.605544
 Std Err Dif 0.01164 DF 4
 Upper CL Dif 0.05100 Prob > |t| 0.1836
 Lower CL Dif -0.01363 Prob > t 0.0918
 Confidence 0.95 Prob < t 0.9082

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-20



Difference 0.01674 t Ratio 2.496298
 Std Err Dif 0.00670 DF 4
 Upper CL Dif 0.03535 Prob > |t| 0.0670
 Lower CL Dif -0.00188 Prob > t 0.0335
 Confidence 0.95 Prob < t 0.9665

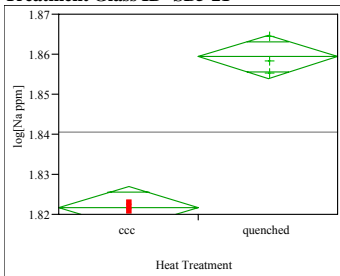
Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-21



Difference 0.00796 t Ratio 0.392667
 Std Err Dif 0.02028 DF 4
 Upper CL Dif 0.06427 Prob > |t| 0.7146
 Lower CL Dif -0.04834 Prob > t 0.3573
 Confidence 0.95 Prob < t 0.6427

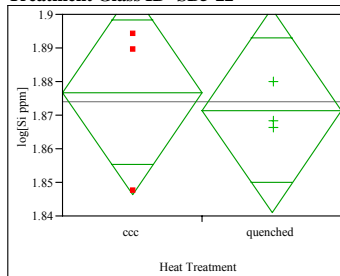
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-21



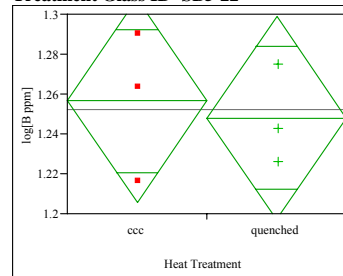
Difference 0.037591 t Ratio 13.83394
 Std Err Dif 0.002717 DF 4
 Upper CL Dif 0.045136 Prob > |t| 0.0002
 Lower CL Dif 0.030047 Prob > t <.0001
 Confidence 0.95 Prob < t 0.9999

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-22



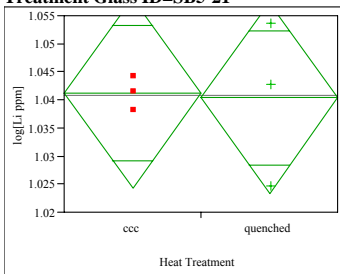
Difference -0.00534 t Ratio -0.34491
 Std Err Dif 0.01547 DF 4
 Upper CL Dif 0.03762 Prob > |t| 0.7475
 Lower CL Dif -0.04829 Prob > t 0.6262
 Confidence 0.95 Prob < t 0.3738

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-22



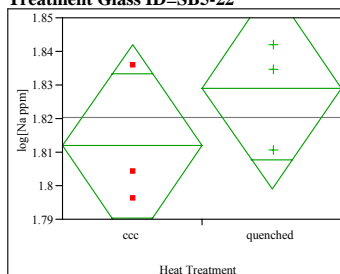
Difference -0.00844 t Ratio -0.32577
 Std Err Dif 0.02589 DF 4
 Upper CL Dif 0.06346 Prob > |t| 0.7609
 Lower CL Dif -0.08033 Prob > t 0.6195
 Confidence 0.95 Prob < t 0.3805

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-21



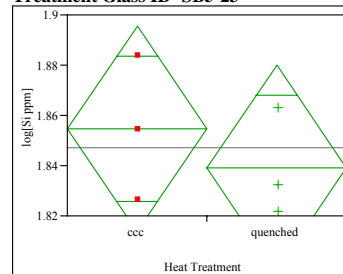
Difference -0.00082 t Ratio -0.09445
 Std Err Dif 0.00865 DF 4
 Upper CL Dif 0.02321 Prob > |t| 0.9293
 Lower CL Dif -0.02484 Prob > t 0.5354
 Confidence 0.95 Prob < t 0.4646

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-22



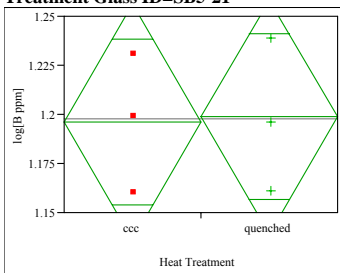
Difference 0.01727 t Ratio 1.12179
 Std Err Dif 0.01540 DF 4
 Upper CL Dif 0.06002 Prob > |t| 0.3247
 Lower CL Dif -0.02548 Prob > t 0.1624
 Confidence 0.95 Prob < t 0.8376

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-23



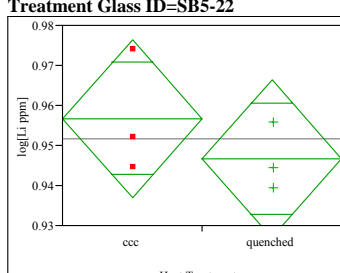
Difference -0.01549 t Ratio -0.74567
 Std Err Dif 0.02078 DF 4
 Upper CL Dif 0.04219 Prob > |t| 0.4973
 Lower CL Dif -0.07318 Prob > t 0.7513
 Confidence 0.95 Prob < t 0.2487

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-21



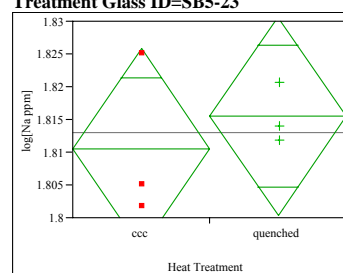
Difference 0.00238 t Ratio 0.078221
 Std Err Dif 0.03041 DF 4
 Upper CL Dif 0.08682 Prob > |t| 0.9414
 Lower CL Dif -0.08207 Prob > t 0.4707
 Confidence 0.95 Prob < t 0.5293

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-22



Difference -0.01012 t Ratio -1.00432
 Std Err Dif 0.01007 DF 4
 Upper CL Dif 0.01785 Prob > |t| 0.3721
 Lower CL Dif -0.03809 Prob > t 0.8140
 Confidence 0.95 Prob < t 0.1860

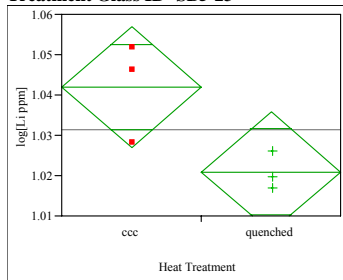
Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-23



Difference 0.00493 t Ratio 0.635854
 Std Err Dif 0.00775 DF 4
 Upper CL Dif 0.02646 Prob > |t| 0.5594
 Lower CL Dif -0.01660 Prob > t 0.2797
 Confidence 0.95 Prob < t 0.7203

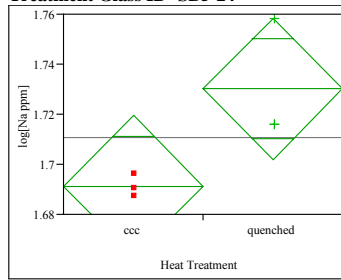
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-23



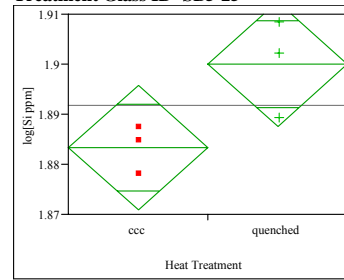
Difference	-0.02099	t Ratio	-2.75229
Std Err Dif	0.00763	DF	4
Upper CL Dif	0.00018	Prob > t	0.0513
Lower CL Dif	-0.04216	Prob > t	0.9744
Confidence	0.95	Prob < t	0.0256

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-24



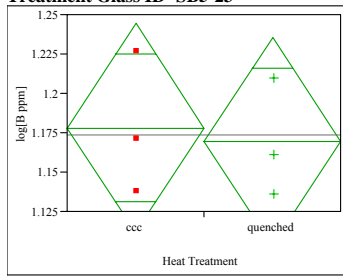
Difference	0.03897	t Ratio	2.71198
Std Err Dif	0.01437	DF	4
Upper CL Dif	0.07887	Prob > t	0.0534
Lower CL Dif	-0.00093	Prob > t	0.0267
Confidence	0.95	Prob < t	0.9733

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-25



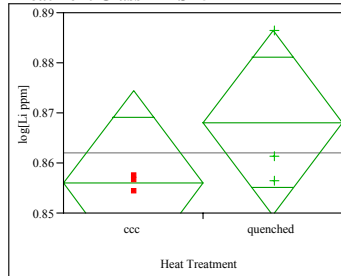
Difference	0.01666	t Ratio	2.64211
Std Err Dif	0.00631	DF	4
Upper CL Dif	0.03417	Prob > t	0.0575
Lower CL Dif	-0.00085	Prob > t	0.0287
Confidence	0.95	Prob < t	0.9713

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-23



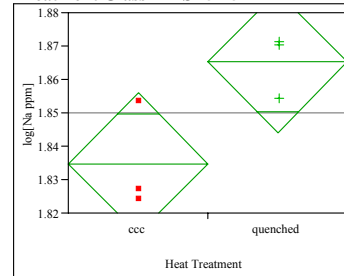
Difference	-0.00888	t Ratio	-0.26296
Std Err Dif	0.03378	DF	4
Upper CL Dif	0.08490	Prob > t	0.8056
Lower CL Dif	-0.10267	Prob > t	0.5972
Confidence	0.95	Prob < t	0.4028

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-24



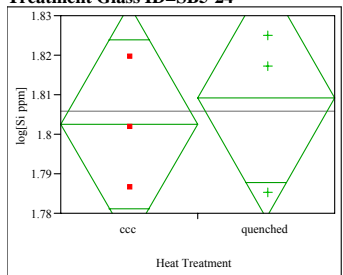
Difference	0.01206	t Ratio	1.286655
Std Err Dif	0.00938	DF	4
Upper CL Dif	0.03809	Prob > t	0.2676
Lower CL Dif	-0.01397	Prob > t	0.1338
Confidence	0.95	Prob < t	0.8662

Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-25



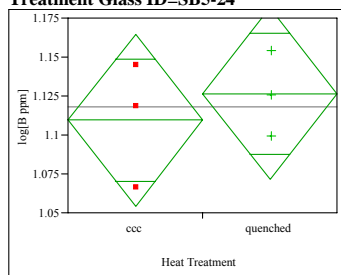
Difference	0.030448	t Ratio	2.821694
Std Err Dif	0.010791	DF	4
Upper CL Dif	0.060407	Prob > t	0.0477
Lower CL Dif	0.000488	Prob > t	0.0239
Confidence	0.95	Prob < t	0.9761

Oneway Analysis of log[Si ppm] By Heat Treatment Glass ID=SB5-24



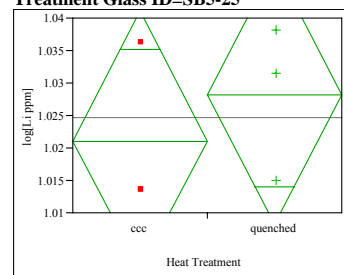
Difference	0.00666	t Ratio	0.430985
Std Err Dif	0.01545	DF	4
Upper CL Dif	0.04956	Prob > t	0.6887
Lower CL Dif	-0.03624	Prob > t	0.3443
Confidence	0.95	Prob < t	0.6557

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-24



Difference	0.01697	t Ratio	0.604115
Std Err Dif	0.02810	DF	4
Upper CL Dif	0.09498	Prob > t	0.5784
Lower CL Dif	-0.06104	Prob > t	0.2892
Confidence	0.95	Prob < t	0.7108

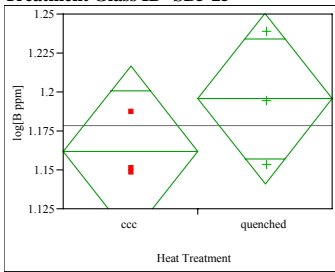
Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-25



Difference	0.00709	t Ratio	0.695513
Std Err Dif	0.01019	DF	4
Upper CL Dif	0.03538	Prob > t	0.5250
Lower CL Dif	-0.02121	Prob > t	0.2625
Confidence	0.95	Prob < t	0.7375

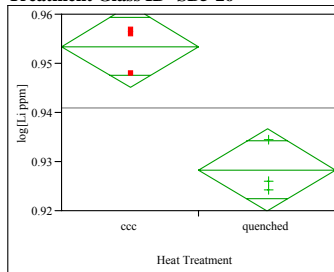
Exhibit B6. Effects of Heat Treatment on PCT Response of Study Glasses. (continued)

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-25



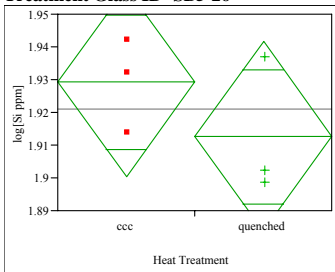
Difference	0.03374	t Ratio	1.215605
Std Err Dif	0.02776	DF	4
Upper CL Dif	0.11080	Prob > t	0.2910
Lower CL Dif	-0.04332	Prob > t	0.1455
Confidence	0.95	Prob < t	0.8545

Oneway Analysis of log[Li ppm] By Heat Treatment Glass ID=SB5-26



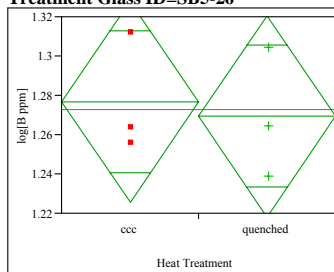
Difference	-0.02516	t Ratio	-5.92408
Std Err Dif	0.00425	DF	4
Upper CL Dif	-0.01337	Prob > t	0.0041
Lower CL Dif	-0.03695	Prob > t	0.9980
Confidence	0.95	Prob < t	0.0020

Oneway Analysis of log[Sr ppm] By Heat Treatment Glass ID=SB5-26



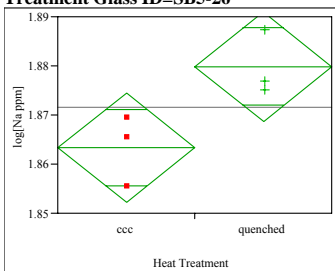
Difference	-0.01668	t Ratio	-1.12868
Std Err Dif	0.01478	DF	4
Upper CL Dif	0.02435	Prob > t	0.3221
Lower CL Dif	-0.05772	Prob > t	0.8389
Confidence	0.95	Prob < t	0.1611

Oneway Analysis of log[B ppm] By Heat Treatment Glass ID=SB5-26



Difference	-0.00744	t Ratio	-0.28588
Std Err Dif	0.02603	DF	4
Upper CL Dif	0.06484	Prob > t	0.7892
Lower CL Dif	-0.07972	Prob > t	0.6054
Confidence	0.95	Prob < t	0.3946

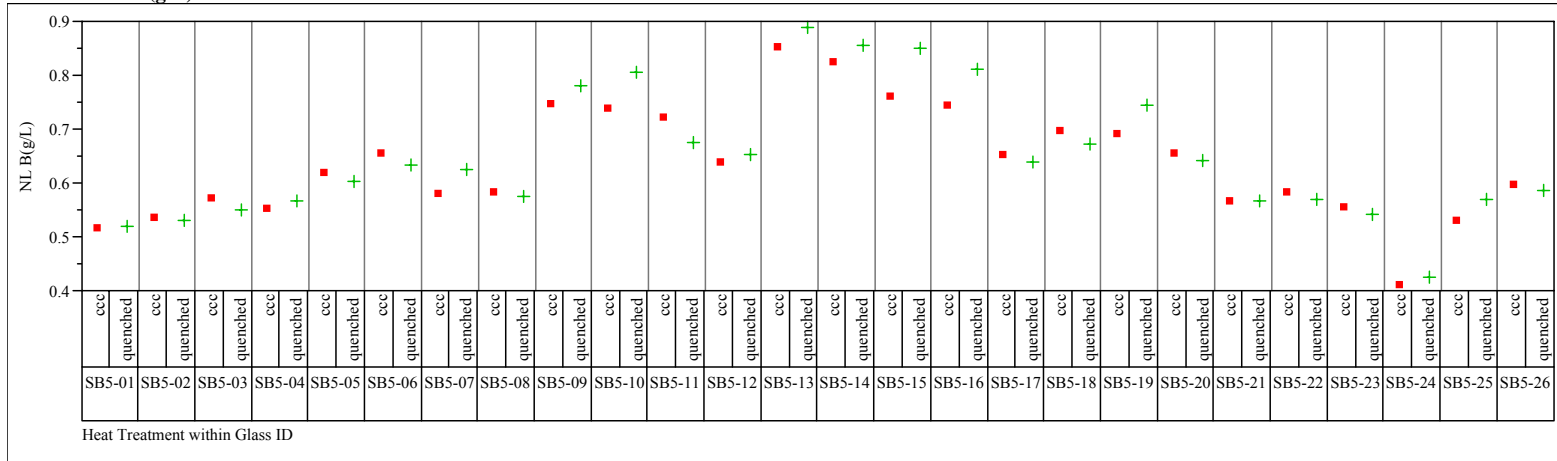
Oneway Analysis of log[Na ppm] By Heat Treatment Glass ID=SB5-26



Difference	0.016543	t Ratio	2.928212
Std Err Dif	0.005649	DF	4
Upper CL Dif	0.032228	Prob > t	0.0429
Lower CL Dif	0.000857	Prob > t	0.0214
Confidence	0.95	Prob < t	0.9786

Exhibit B7. Effects of Heat Treatment for Study Glasses by Compositional View.

**Comp View=Measured
 Chart for NL B(g/L)**



**Comp View=Measured
 Chart for NL Li (g/L)**

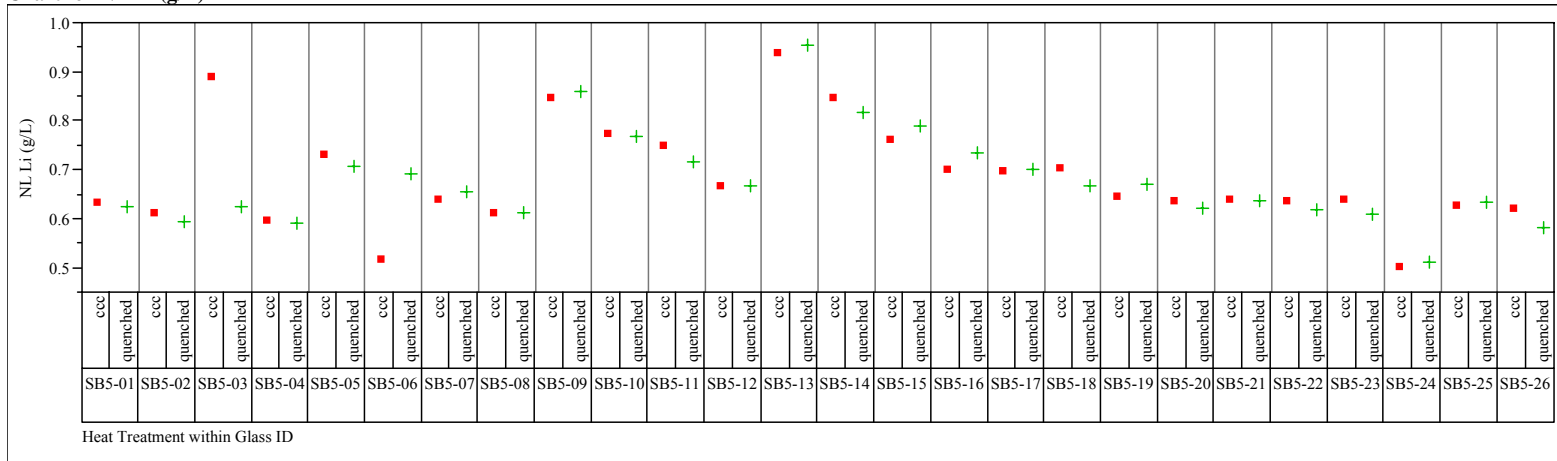
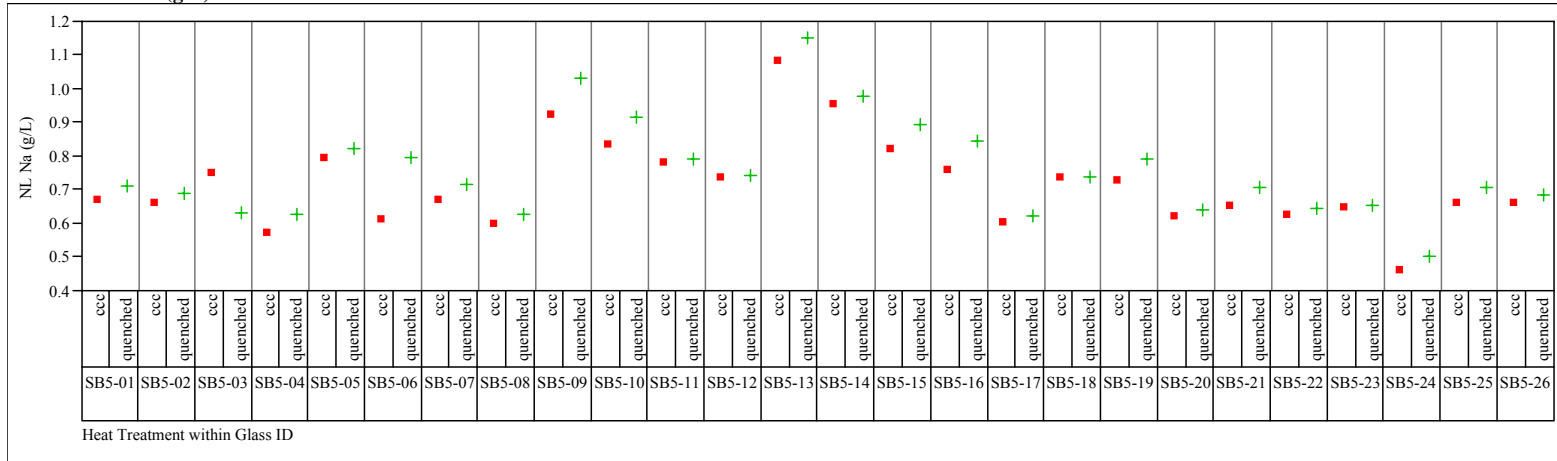


Exhibit B7. Effects of Heat Treatment for Study Glasses by Compositional View. (continued)

**Comp View=Measured
Chart for NL Na (g/L)**



**Comp View=Measured
Chart for NL Si (g/L)**

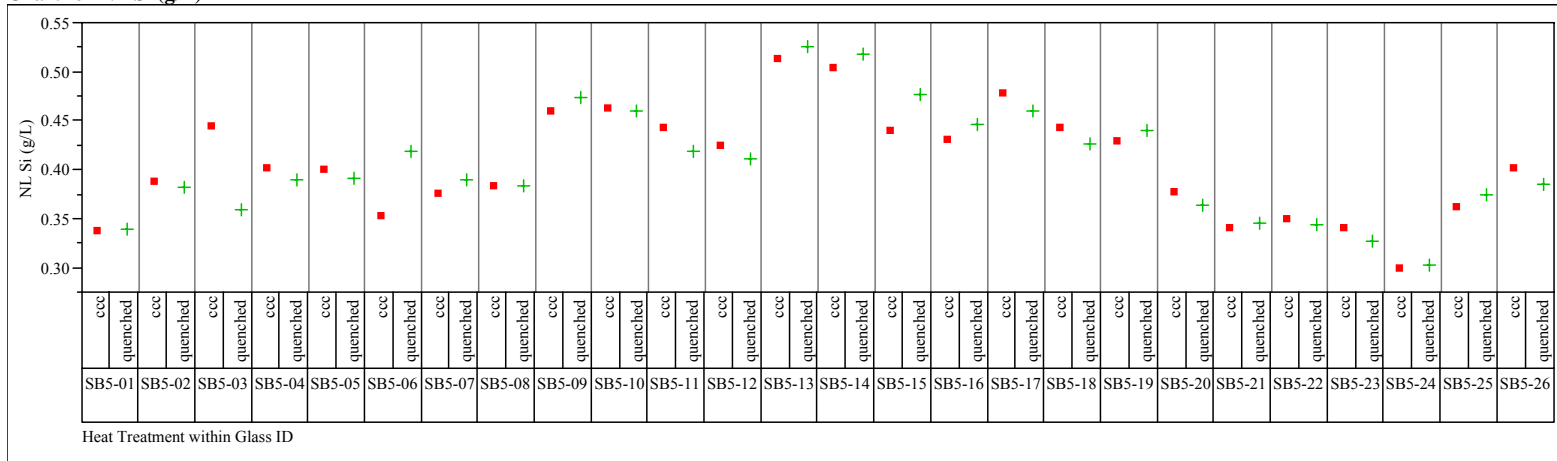
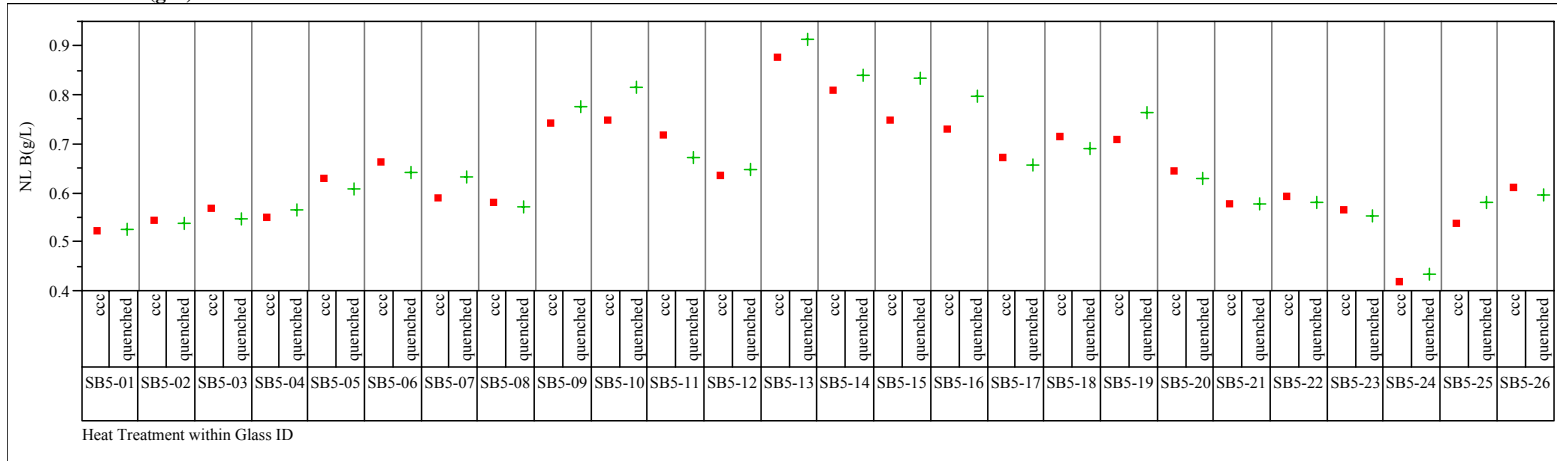


Exhibit B7. Effects of Heat Treatment for Study Glasses by Compositional View. (continued)

**Comp View=Measured bc
Chart for NL B(g/L)**



**Comp View=Measured bc
Chart for NL Li (g/L)**

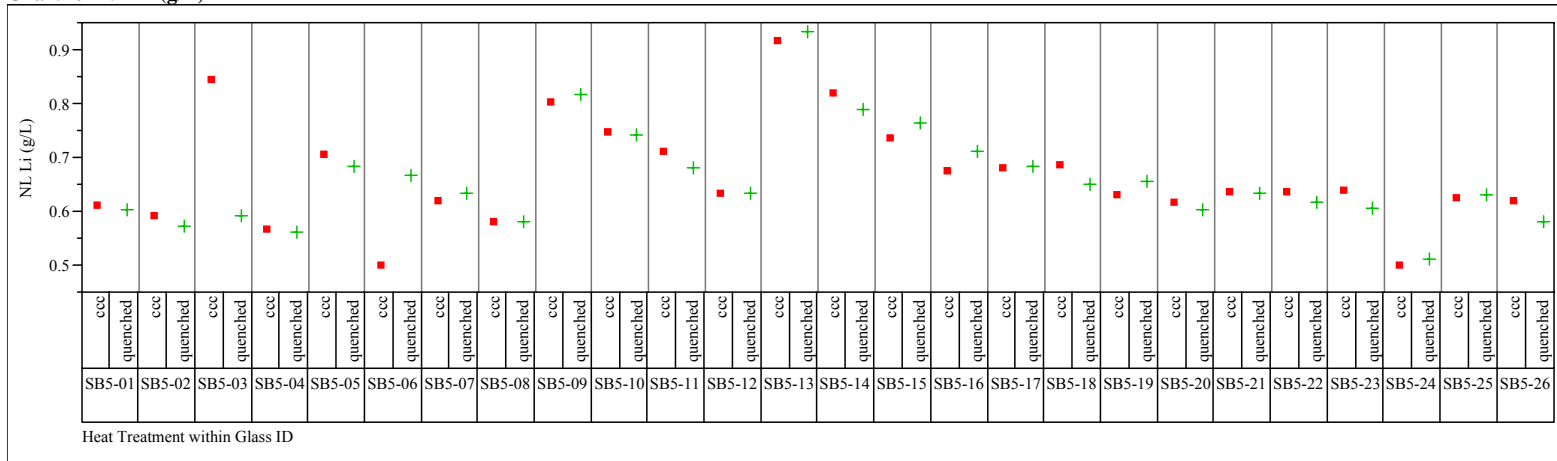
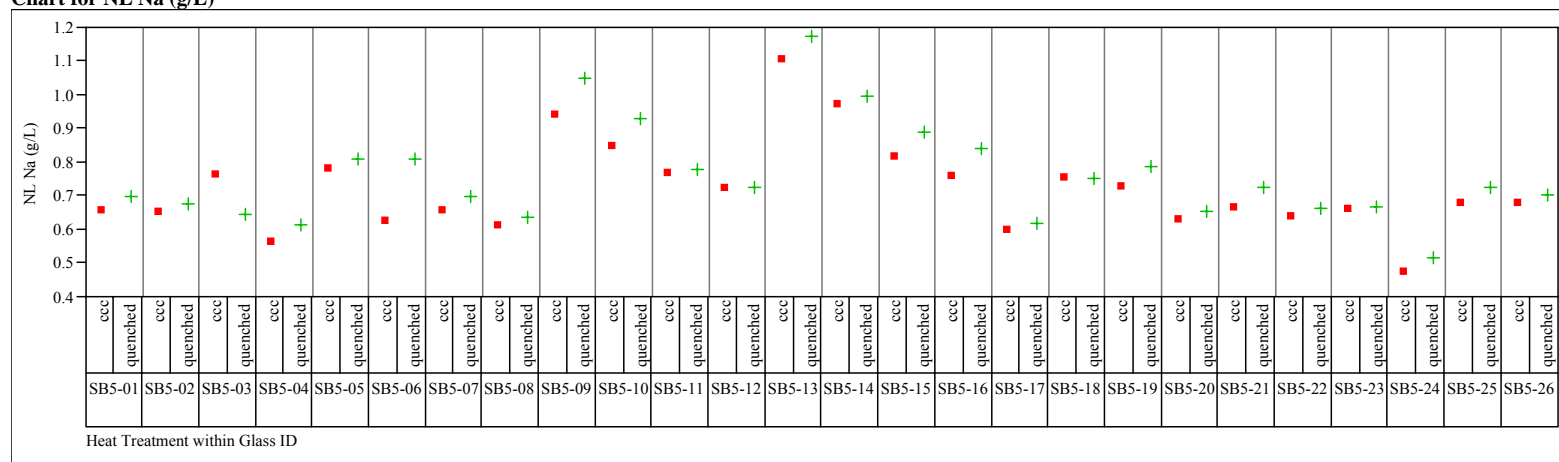


Exhibit B7. Effects of Heat Treatment for Study Glasses by Compositional View. (continued)

**Comp View=Measured bc
Chart for NL Na (g/L)**



**Comp View=Measured bc
Chart for NL Si (g/L)**

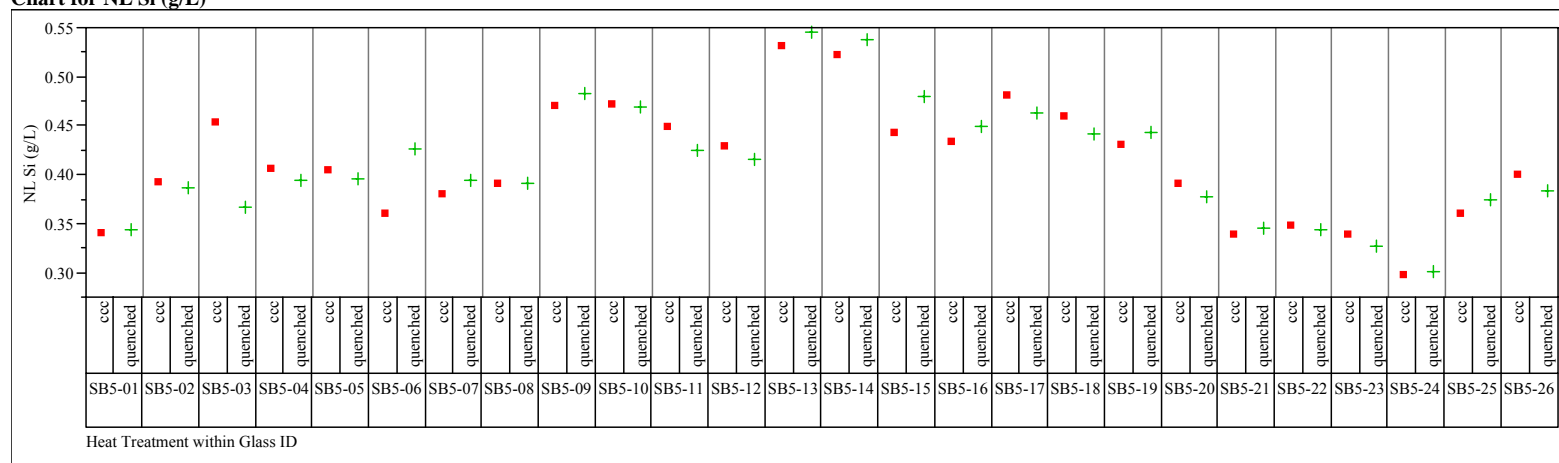
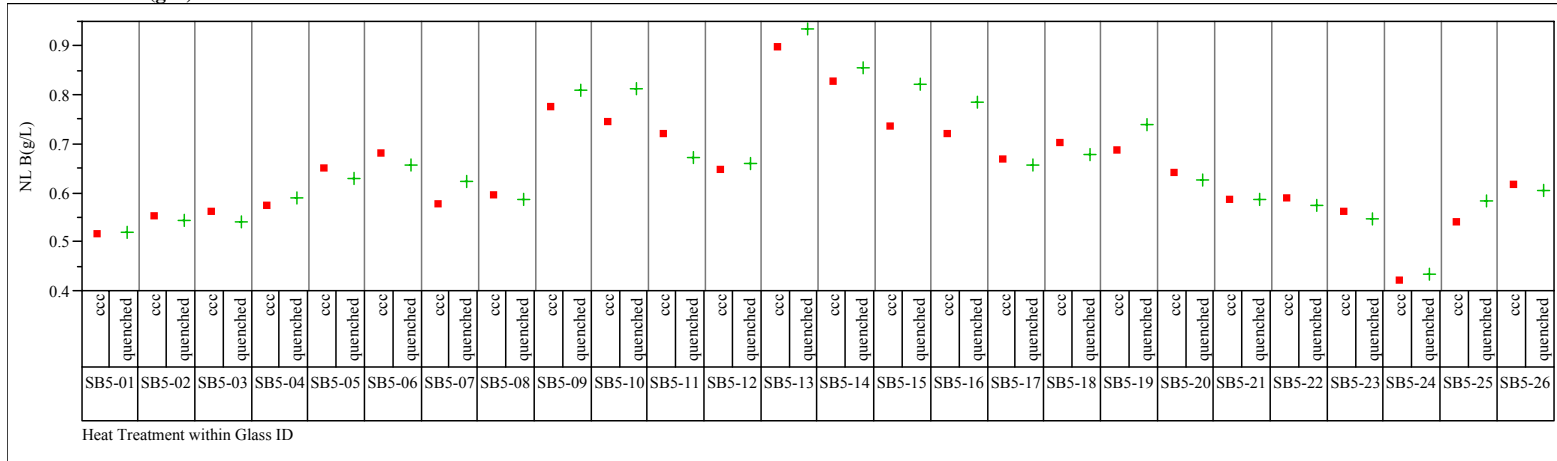


Exhibit B7. Effects of Heat Treatment for Study Glasses by Compositional View. (continued)

**Comp View=Targeted
 Chart for NL B(g/L)**



**Comp View=Targeted
 Chart for NL Li (g/L)**

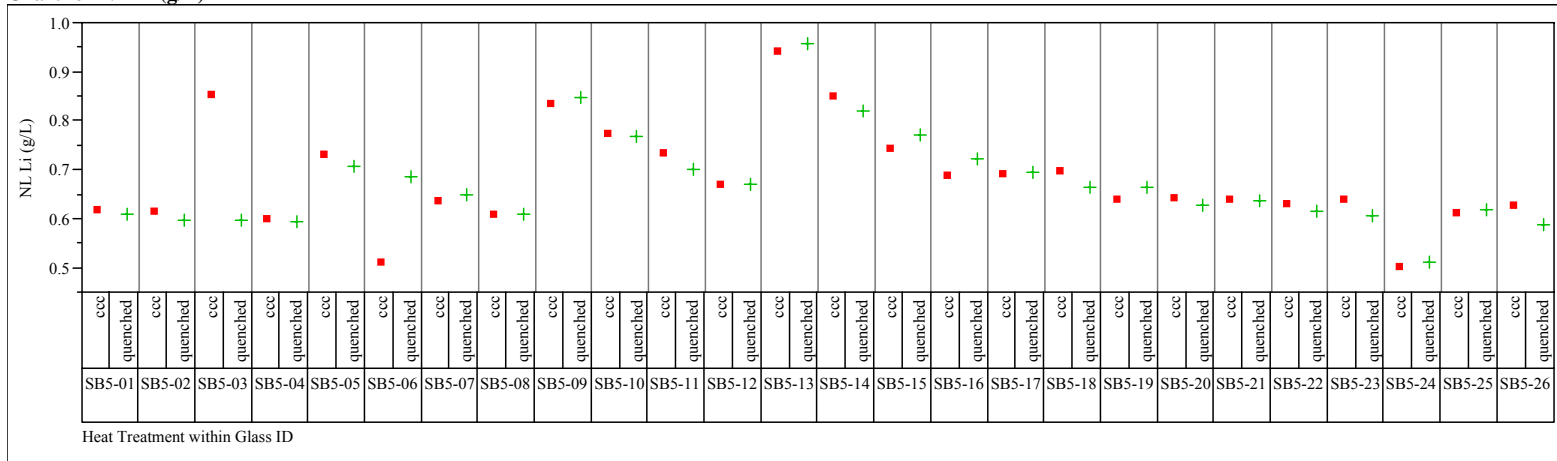
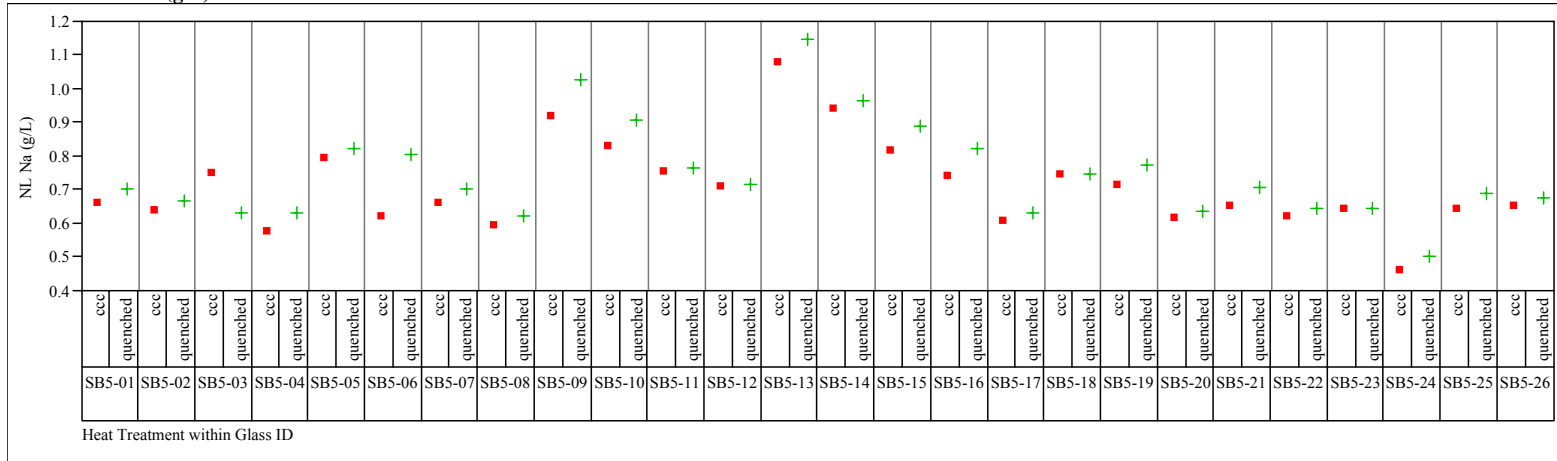


Exhibit B7. Effects of Heat Treatment for Study Glasses by Compositional View. (continued)

**Comp View=Targeted
Chart for NL Na (g/L)**



**Comp View=Targeted
Chart for NL Si (g/L)**

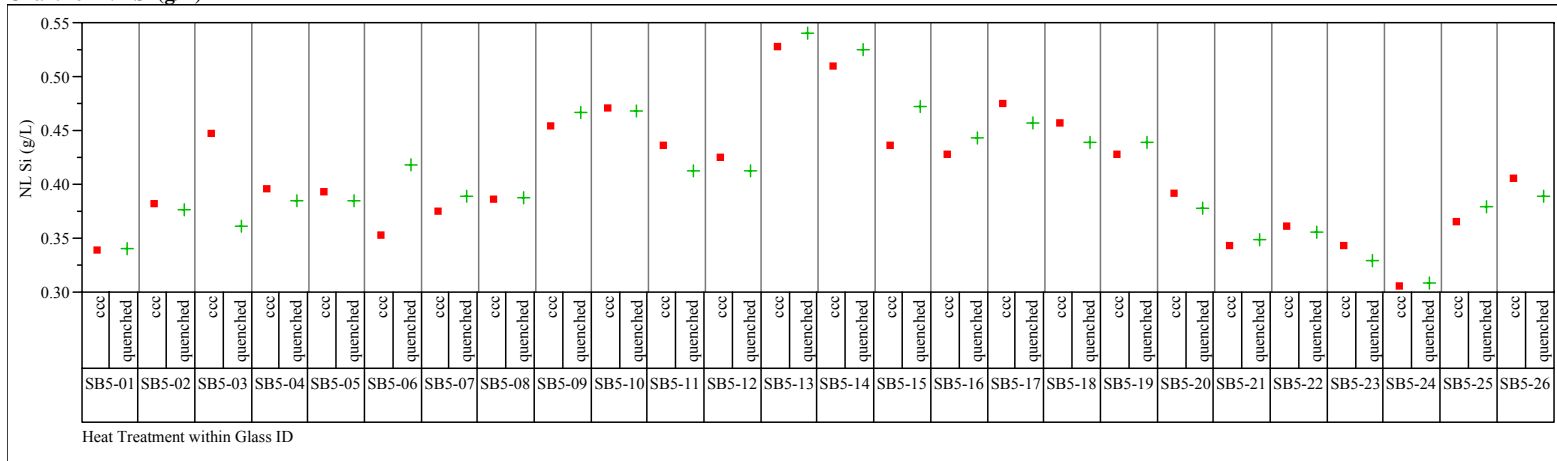
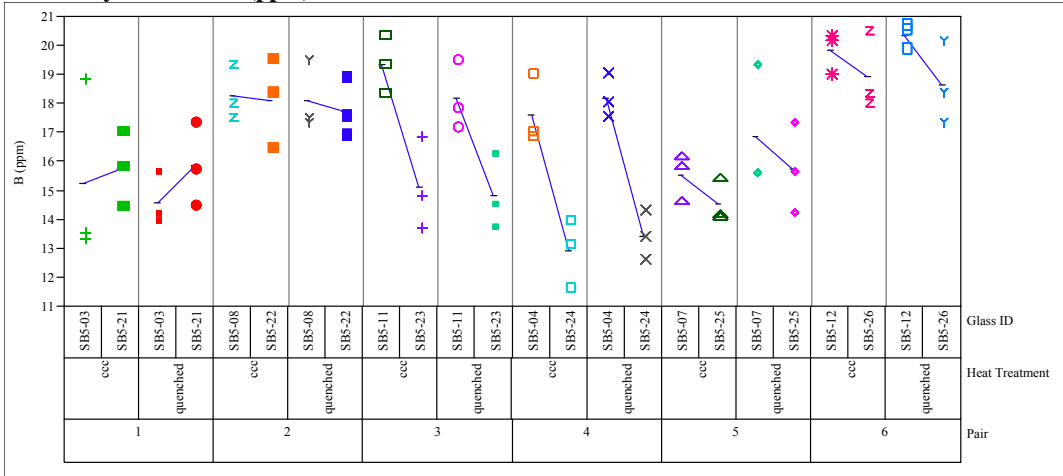
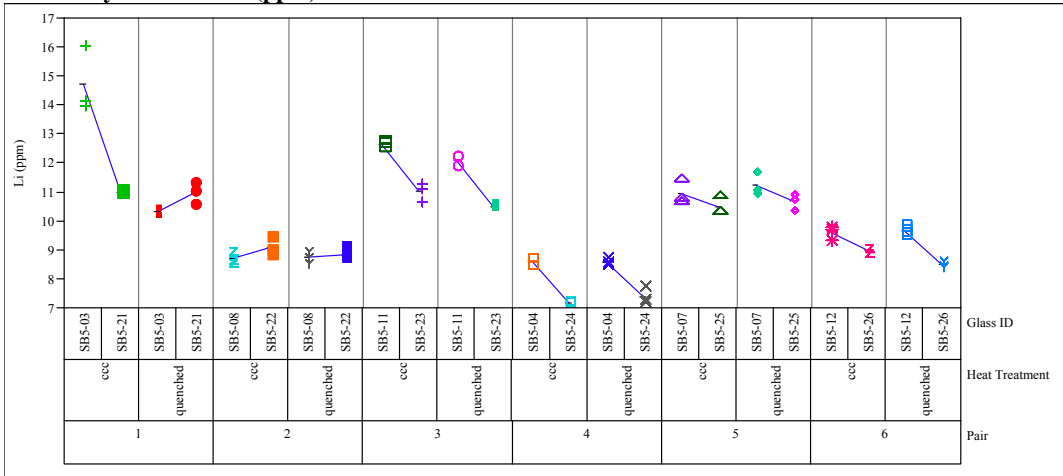


Exhibit B8. Comparisons Between the Potential Surrogate Pairs of Glasses. (continued)

Variability Chart for B (ppm)



Variability Chart for Li (ppm)



Variability Chart for Na (ppm)

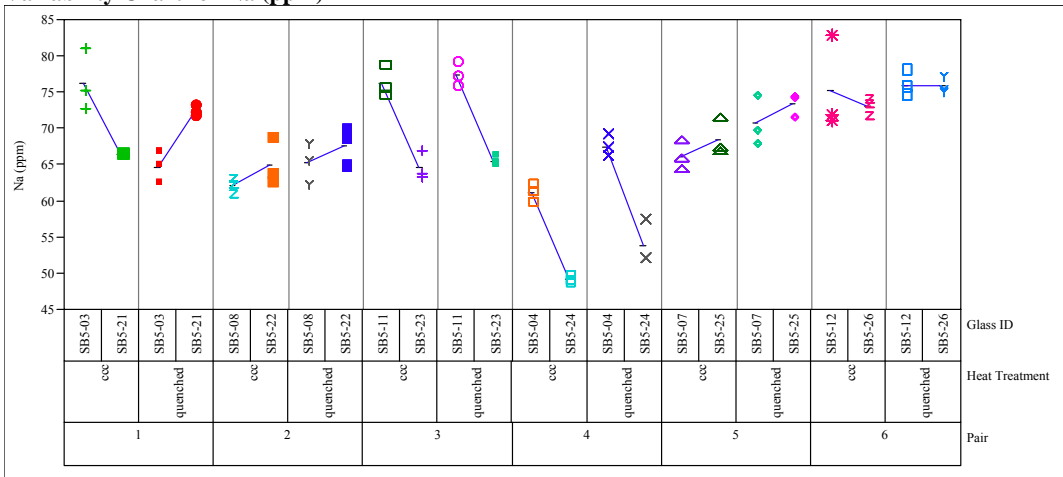
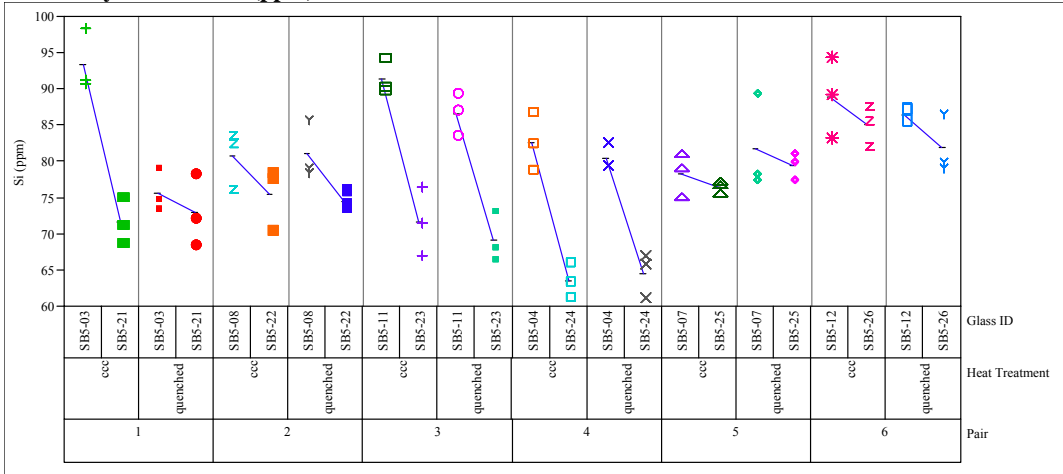
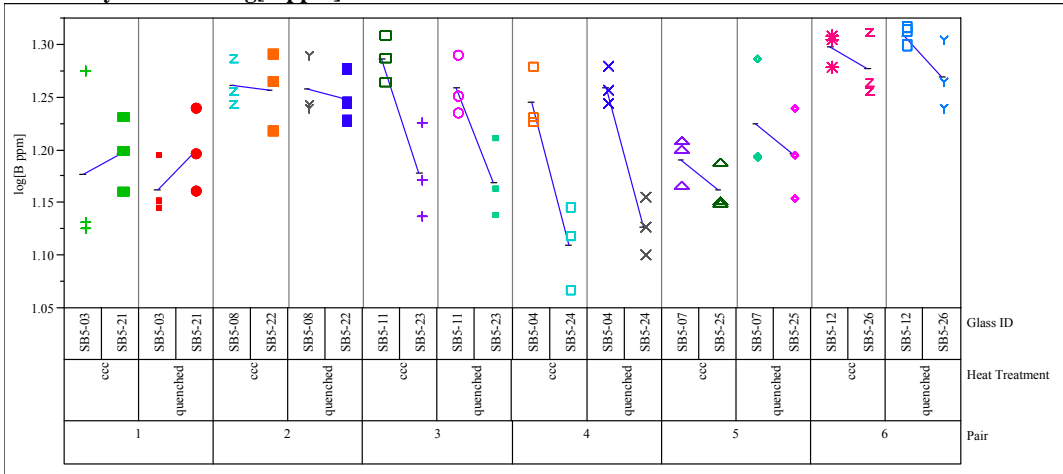


Exhibit B8. Comparisons Between the Potential Surrogate Pairs of Glasses. (continued)

Variability Chart for Si (ppm)



Variability Chart for log[B ppm]



Variability Chart for log[Li ppm]

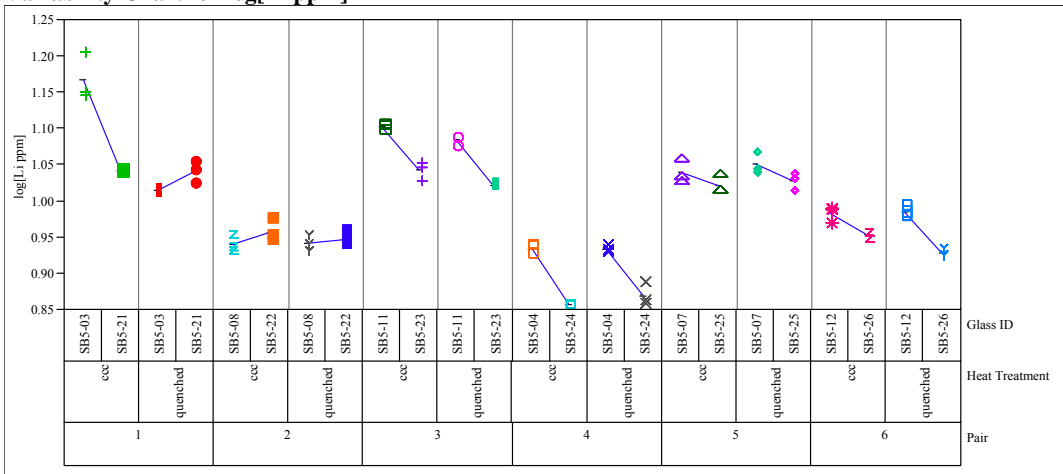
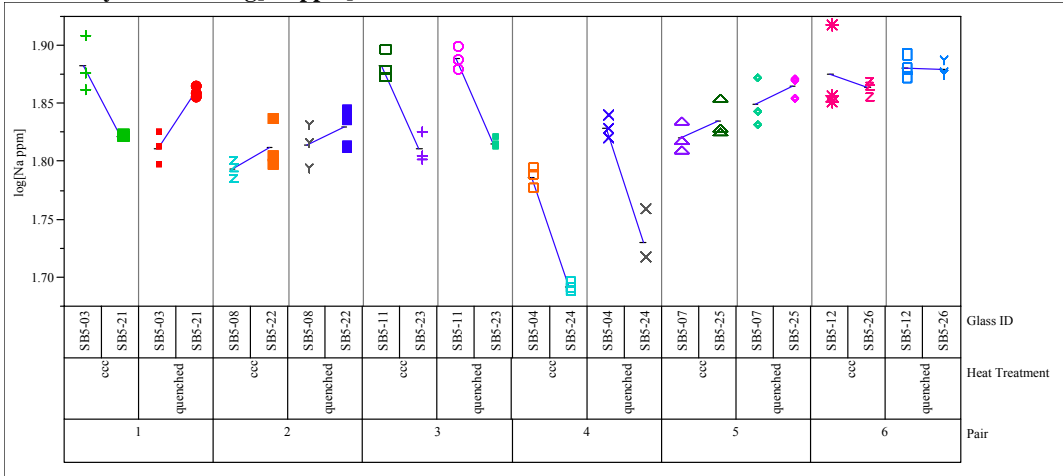
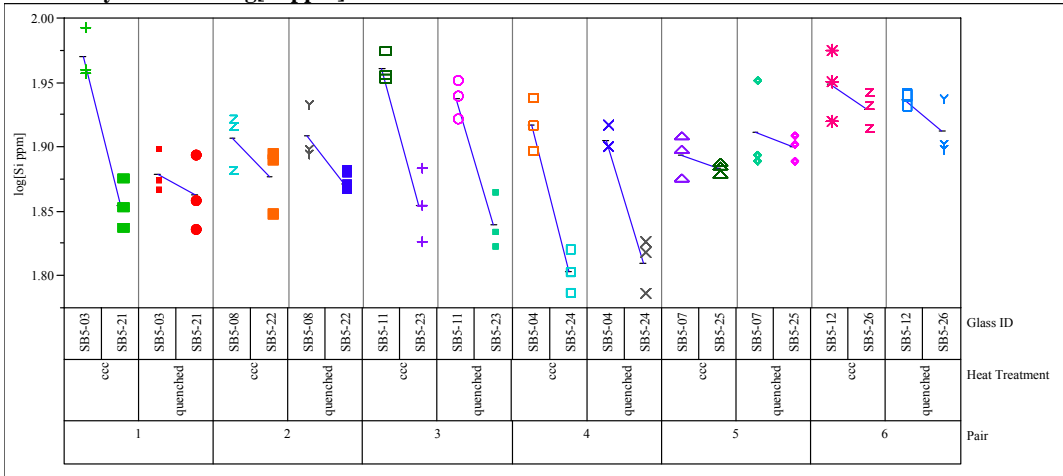


Exhibit B8. Comparisons Between the Potential Surrogate Pairs of Glasses. (continued)

Variability Chart for log[Na ppm]



Variability Chart for log[Si ppm]



Variability Chart for log NL[B (g/L)]

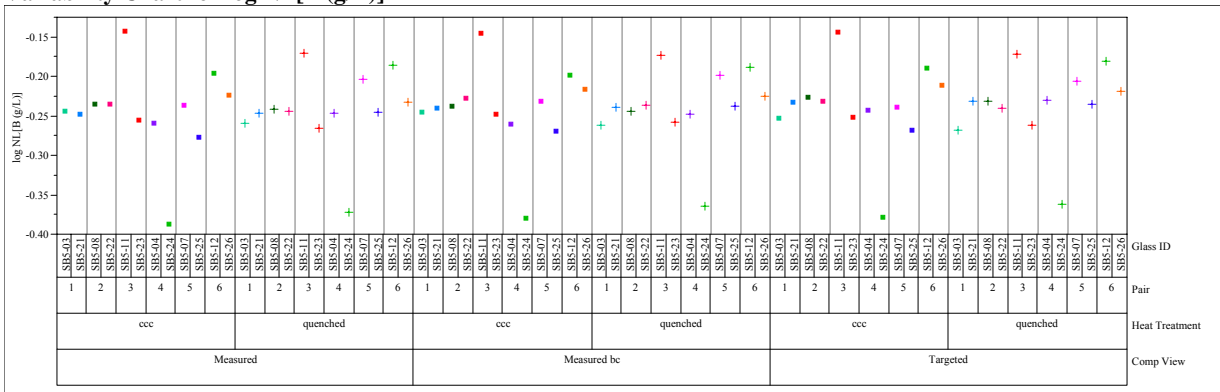
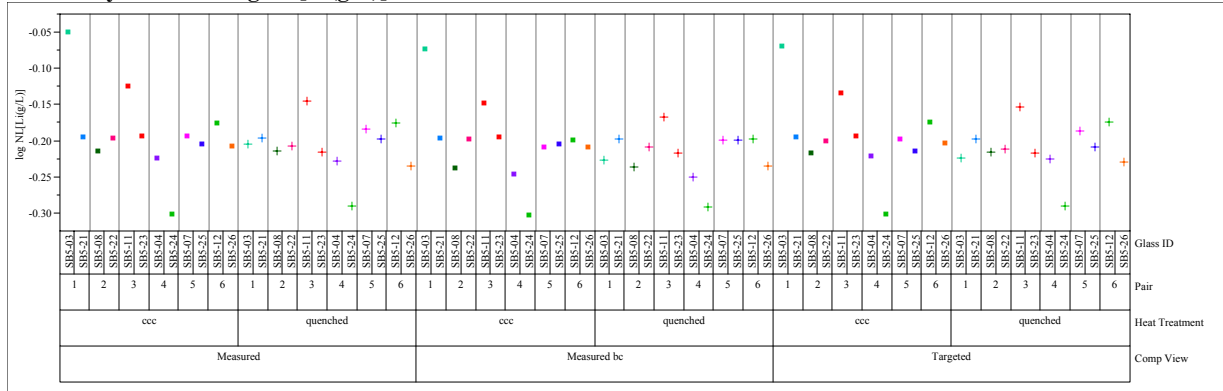
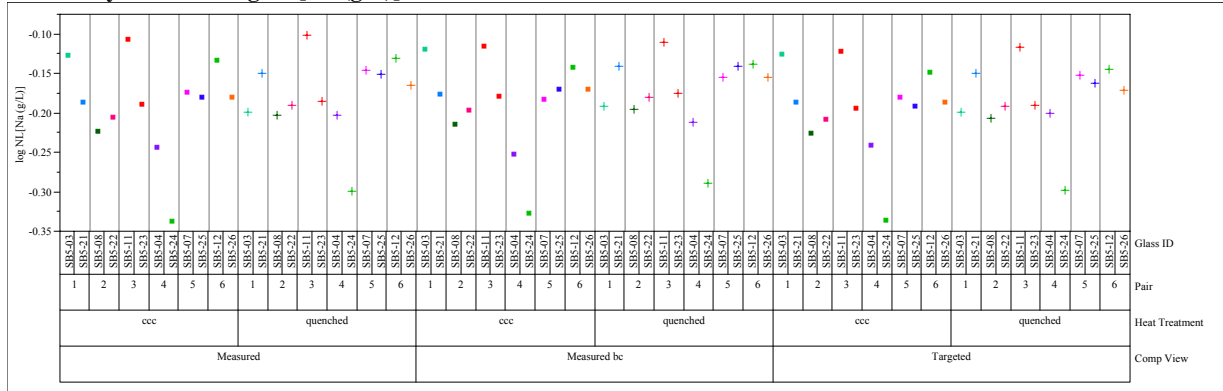


Exhibit B8. Comparisons Between the Potential Surrogate Pairs of Glasses. (continued)

Variability Chart for log NL[Li(g/L)]



Variability Chart for log NL[Na (g/L)]



Variability Chart for log NL[Si (g/L)]

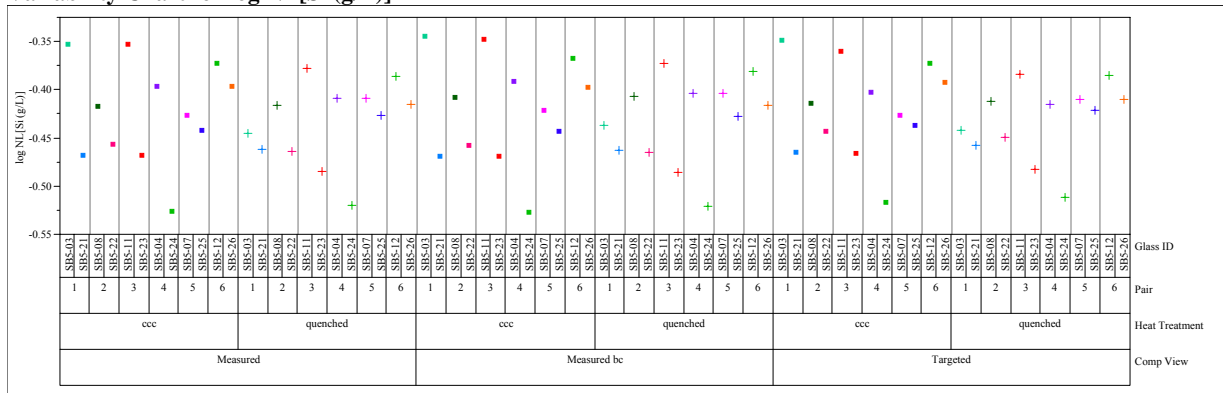
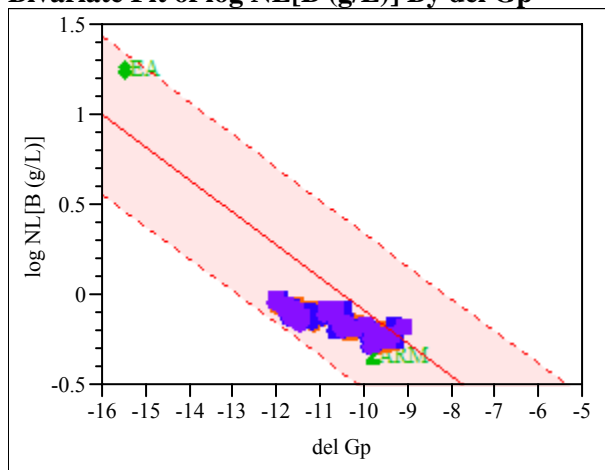


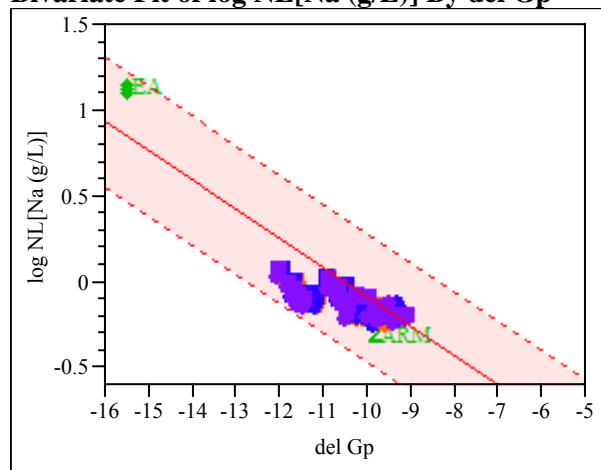
Exhibit B9. ΔG_p Predictions versus Common Logarithm Normalized Leachate (log NL[.]) for B, Li, Na, and Si Over All Compositional Views and Heat Treatments for Study Glasses SB5-01 through SB5-20.

Legend	Glass Standard or Heat Treatment-Compositional View
z	1 ARM
◇	2 EA
●	3 measured bc-ccc
■	4 measured bc-quenched
●	5 measured-ccc
■	6 measured-quenched
●	7 targeted-ccc
■	8 targeted-quenched

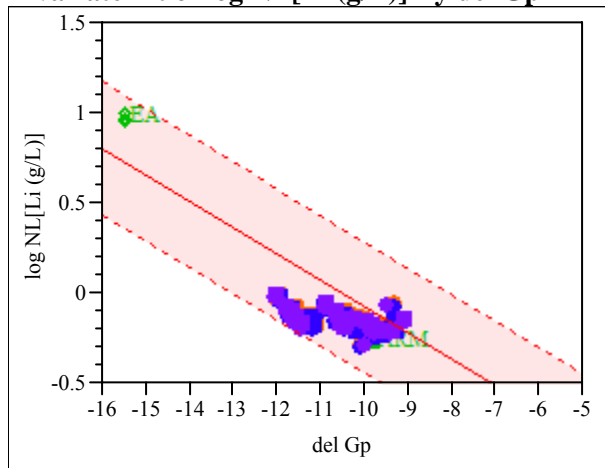
Bivariate Fit of log NL[B (g/L)] By ΔG_p



Bivariate Fit of log NL[Na (g/L)] By ΔG_p



Bivariate Fit of log NL[Li (g/L)] By ΔG_p



Bivariate Fit of log NL[Si (g/L)] By ΔG_p

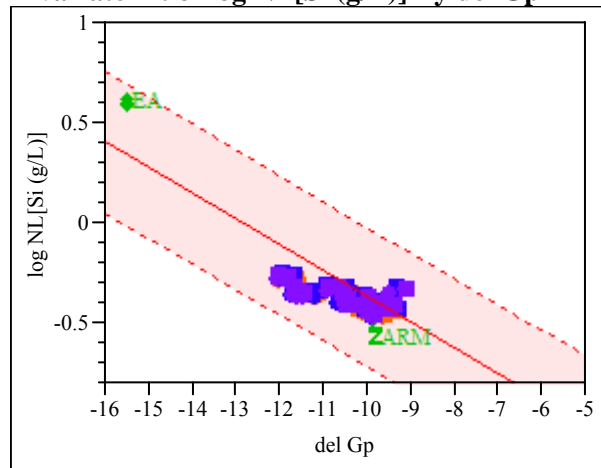
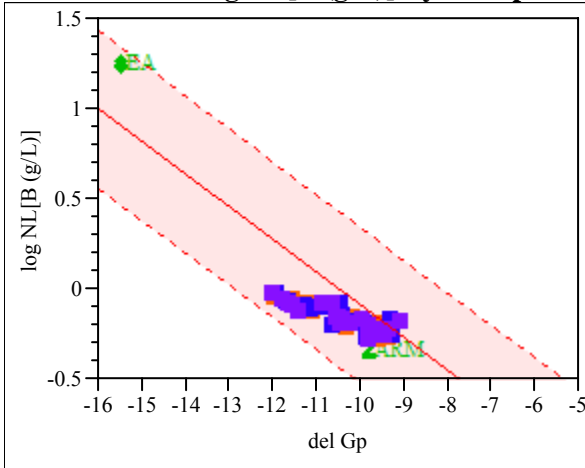


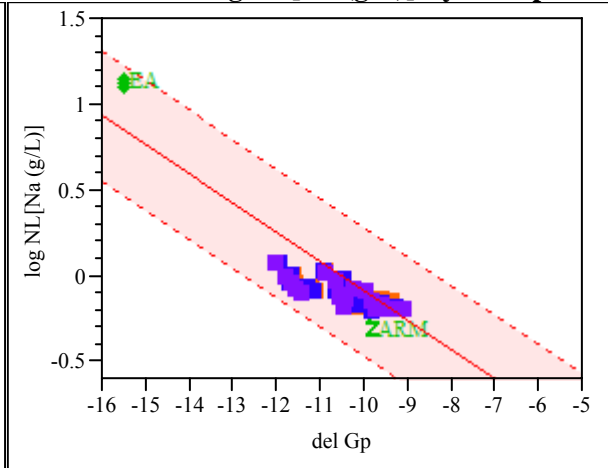
Exhibit B10. ΔG_p Predictions versus Common Logarithm Normalized Leachate (log NL[.]) for B, Li, Na, and Si Over All Compositional Views for Quenched Versions of Study Glasses SB5-01 through SB5-20.

Legend		Glass Standard or Heat Treatment-Compositional View
z	1	ARM
◇	2	EA
●	3	measured bc-ccc
■	4	measured bc-quenched
●	5	measured-ccc
■	6	measured-quenched
●	7	targeted-ccc
■	8	targeted-quenched

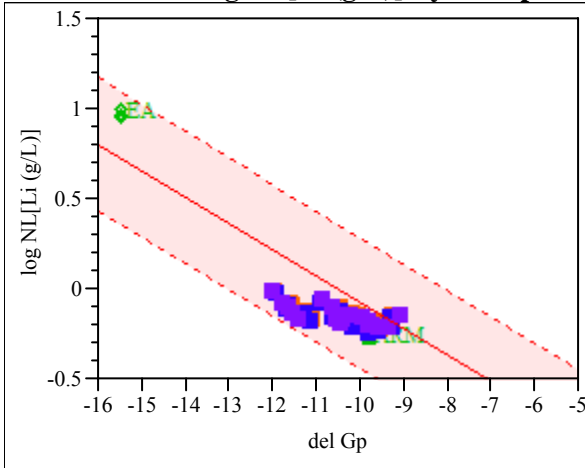
Bivariate Fit of log NL[B (g/L)] By ΔG_p



Bivariate Fit of log NL[Na (g/L)] By ΔG_p



Bivariate Fit of log NL[Li (g/L)] By ΔG_p



Bivariate Fit of log NL[Si (g/L)] By ΔG_p

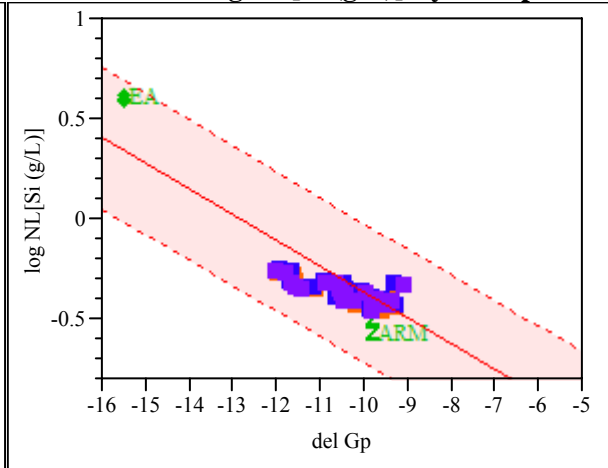
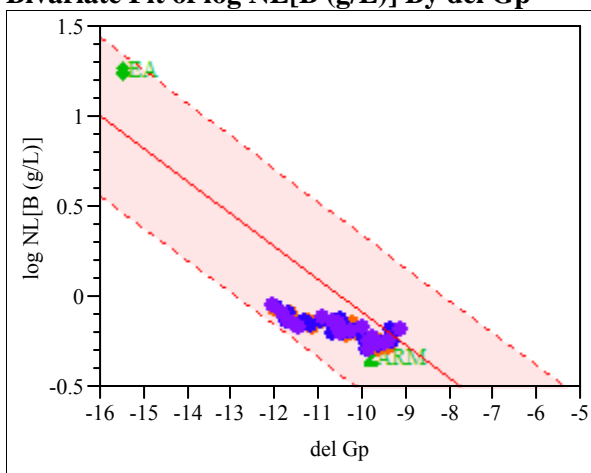


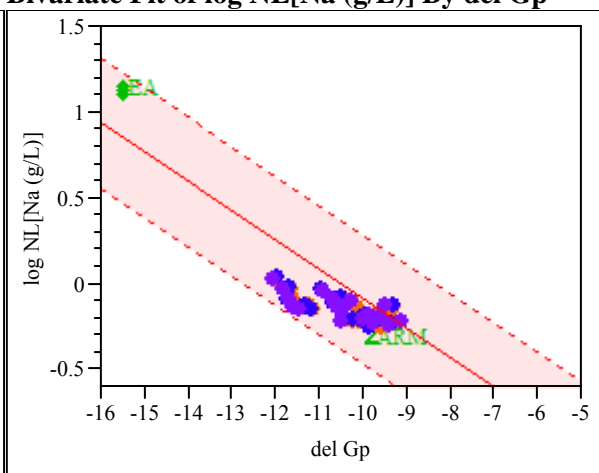
Exhibit B11. ΔG_p Predictions versus Common Logarithm Normalized Leachate (log NL[.]) for B, Li, Na, and Si Over All Compositional Views for CCC Versions of Study Glasses SB5-01 through SB5-20.

Legend		Glass Standard or Heat Treatment-Compositional View
z	1	ARM
◇	2	EA
●	3	measured bc-ccc
■	4	measured bc-quenched
●	5	measured-ccc
■	6	measured-quenched
●	7	targeted-ccc
■	8	targeted-quenched

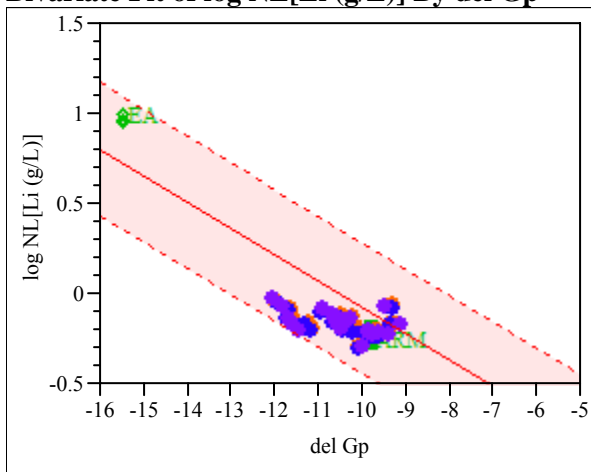
Bivariate Fit of log NL[B (g/L)] By ΔG_p



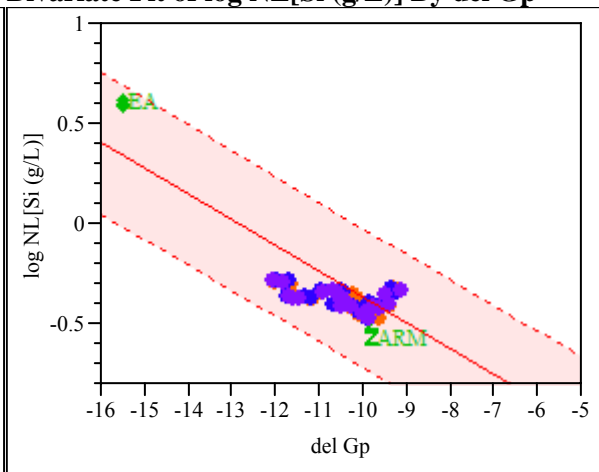
Bivariate Fit of log NL[Na (g/L)] By ΔG_p



Bivariate Fit of log NL[Li (g/L)] By ΔG_p



Bivariate Fit of log NL[Si (g/L)] By ΔG_p



Distribution:

C.J. Bannochie, 773-42A
A.B. Barnes, 999-W
D.R. Best, 786-1A
J.M. Bricker, 704-27S
D.A. Crowley, 773-43A
B.A. Davis, 704-27S
T.B. Edwards, 999-W
T.L. Fellingner, 704-26S
S. D. Fink, 773-A
K.M. Fox, 999-W
C.W. Gardner, 773-A
B.J. Giddings, 786-5A
J.M. Gillam, 766-H
J.C. Griffin, 773-A
B.A. Hamm, 766-H
C.C. Herman, 999-W
J.F. Iaukea, 704-30S
T.M. Jones, 999-W

D.D. Larsen, 766-H
D.J. McCabe, 773-42A
R.T. McNew, 704-27S
D.H. Miller, 999-W
T.A. Nance, 773-42A
J.D. Newell, 999-W
J.E. Occhipinti, 704-S
D.K. Peeler, 999-W
F.C. Raszewski, 999-W
J.W. Ray, 704-S
I.A. Reamer, 999-1W
H.B. Shah, 766-H
D.C. Sherburne, 704-S
M.E. Smith, 999-W
M.E. Stone, 999-W
J. Stuberfield, 766-H
R.J. Workman, 999-1W
A.L. Youchak-Billings, 999-W