

Beryllium Proficiency Analytical Testing Program

- Requested by DOE and the AIHA to monitor laboratories performing industrial hygiene analysis of beryllium filters
- Resulted in a Y-12 cost savings estimated at ~\$17,000.00
- There were 26 participants enrolled from the USA and Canada for the first study (with 25 completing)
- Nine hundred samples were prepared for the three rounds conducted in 2003
- Future plans by the AIHA to increase the scope to include additional beryllium matrices and incorporate BePAT into its accreditation program

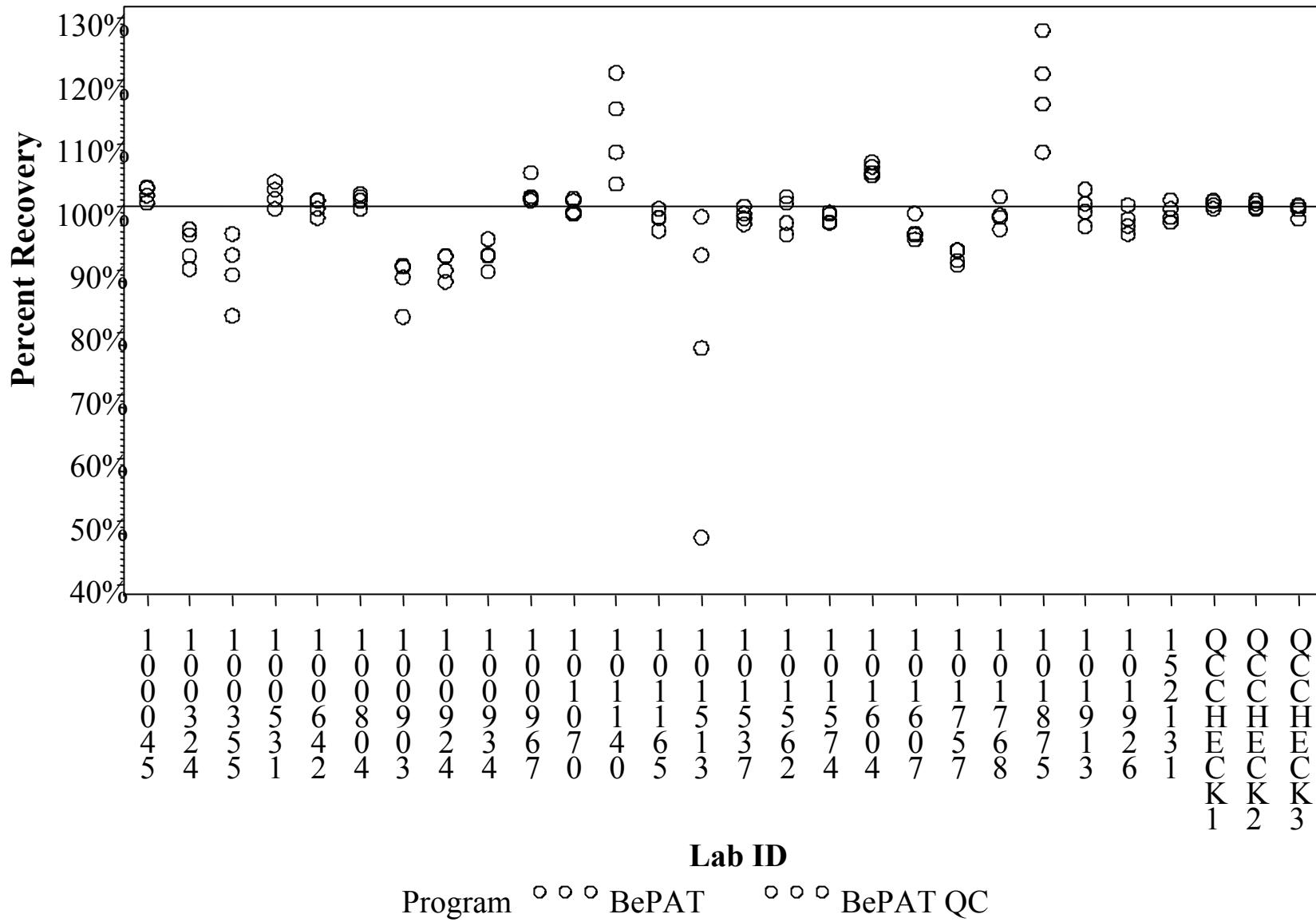
2003 BePAT Statistical Data

Target Value	N	Mean	Std Dev	Coefficient of Variation	Lower Limit	Upper Limit	Round	# Rated Acceptable	% Labs Acceptable	# of Labs Within 3s
0.4126	25	0.408	0.033	0.08151	0.308	0.507	1	25	100.00%	25
11.39	25	11.27	0.703	0.0624	9.16	13.38	1	25	100.00%	25
0.1476	25	0.144	0.021	0.1436	0.082	0.206	1	23	92.00%	23
1.224	25	1.196	0.071	0.05911	0.984	1.408	1	25	100.00%	25
9.905001	26	9.808	0.505	0.05148	8.294	11.32	2	26	100.00%	26
0.1492	26	0.15	0.014	0.09468	0.107	0.193	2	25	96.15%	25
0.5968	25	0.596	0.047	0.07908	0.455	0.738	2	23	92.00%	23
21	25	21.019	1.147	0.05458	17.58	24.46	2	24	96.00%	24
1.22	25	1.191	0.09	0.07535	0.921	1.46	3	24	96.00%	24
24.32	25	24.114	1.593	0.06604	19.34	28.89	3	24	96.00%	24
0.37	25	0.378	0.023	0.06044	0.309	0.446	3	25	100.00%	24
14.92	25	14.79	1.764	0.1193	9.497	20.08	3	24	96.00%	23



Beryllium Proficiency Analytical Testing (BePAT) Report

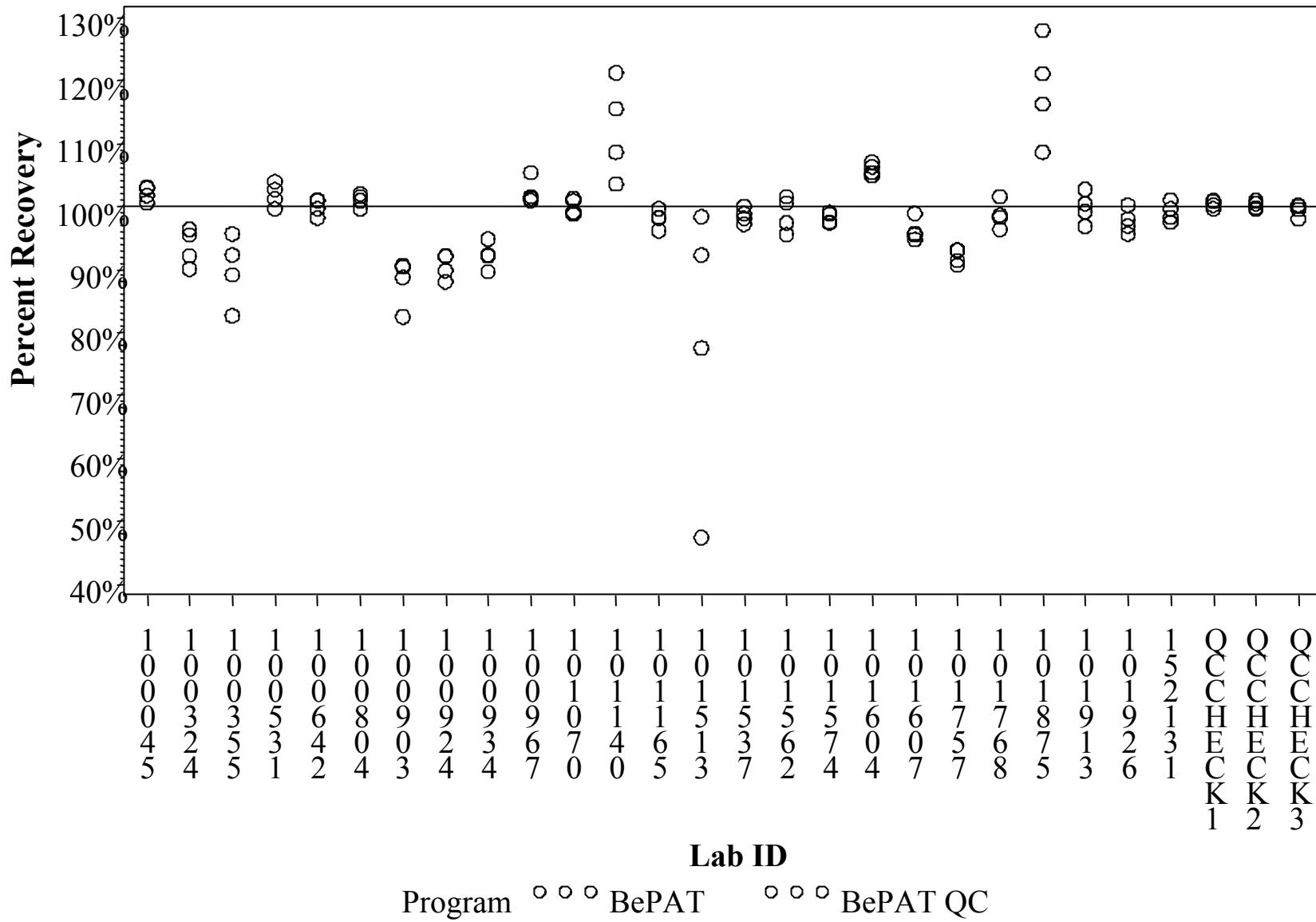
Round 1 Jan - Apr 2003





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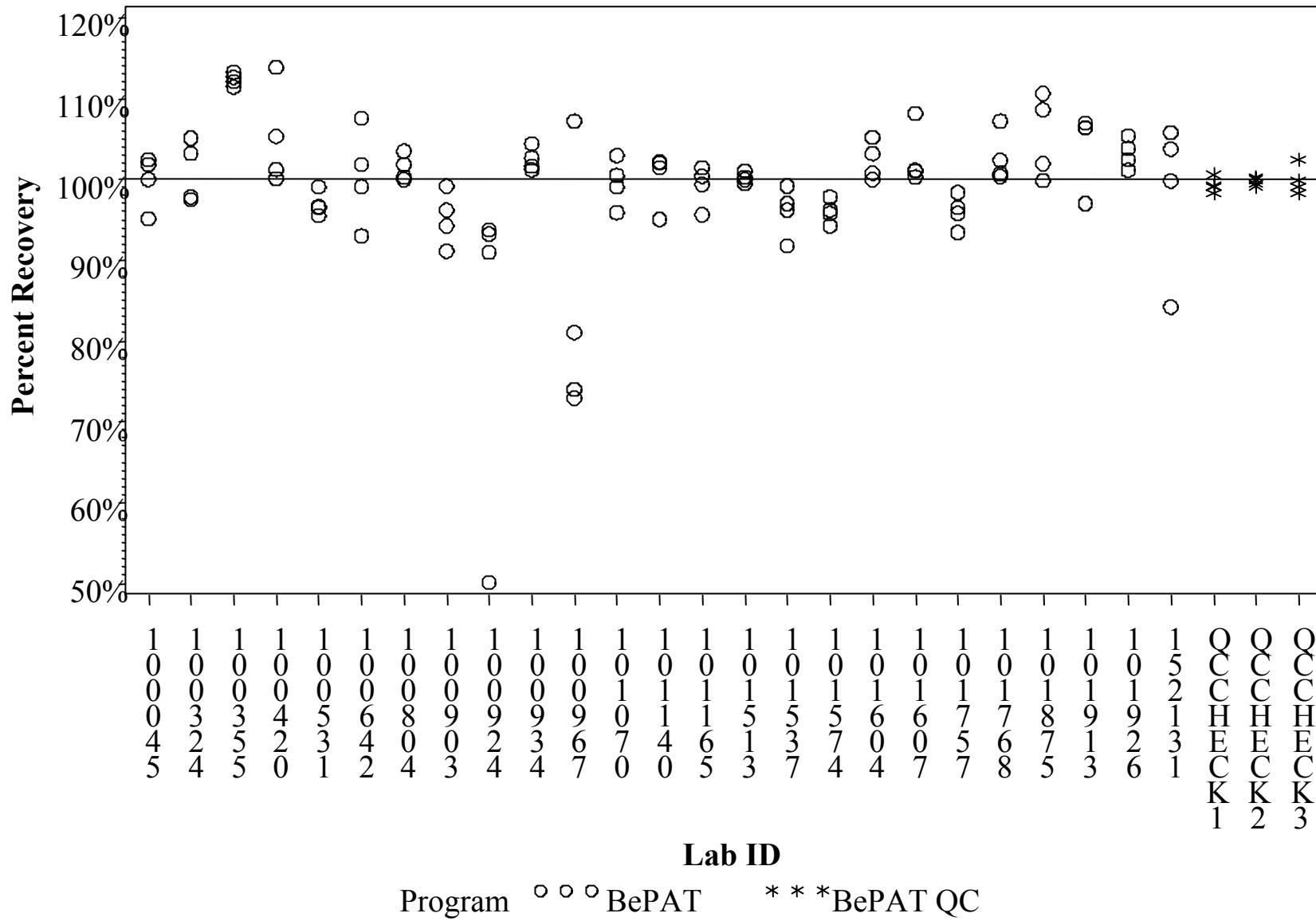
Round 1 Jan - Apr 2003





Beryllium Proficiency Analytical Testing (BePAT) Report

Round 3 (Sep - Dec 2003)



BePAT & AIHA Lab Accreditation

- The AIHA is developing a beryllium accreditation program including the BePAT
- AIHA policy with Beryllium accreditation is scheduled to be issued in April 2004
- AIHA is seeking input for beryllium accreditation requirements (QC, contamination control, etc.)

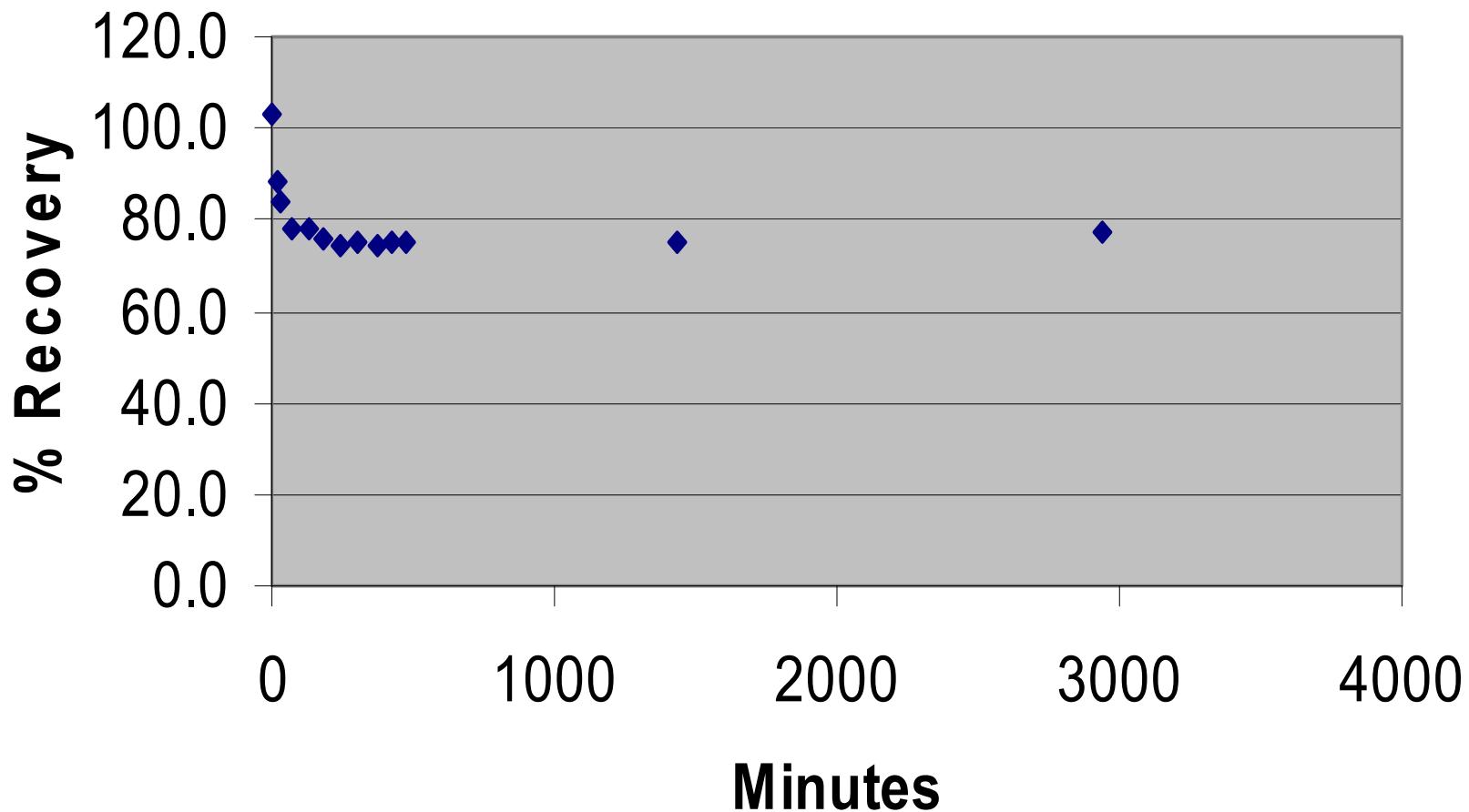
Beryllium Oxide Proficiency Testing Program Development

- Y-12 lab is performing time studies on BeO suspension slurry to use as a standard
- Transportation/shipping issues to be resolved
- Stability and adherence of BeO to filter media must be studied
- Technique Comparison Studies of Standard need to be performed

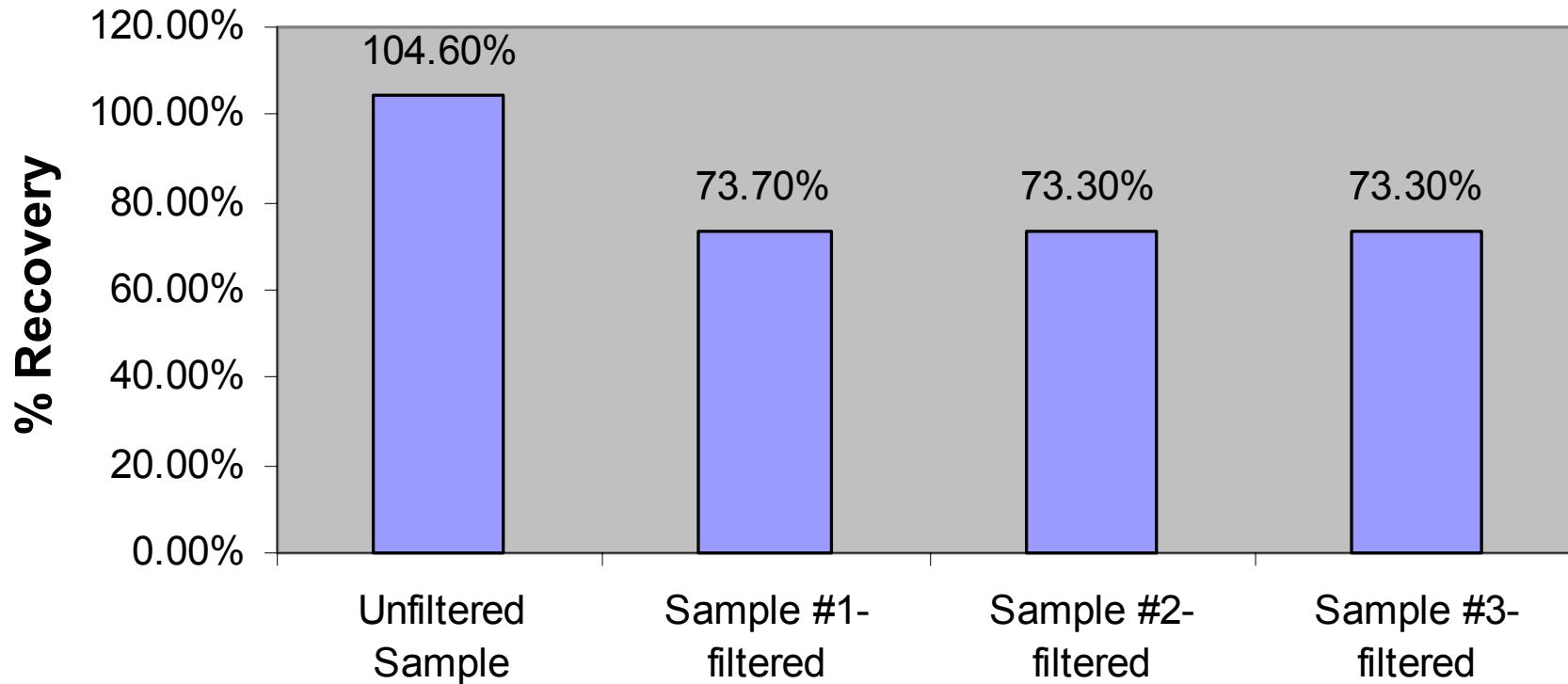
BeO Standard Time Studies

- Y-12 has collected data on the stability of BeO suspension slurry
- 13 aliquots were taken and analysis performed over increasing time intervals
- Y-12 is determining if BeO suspension is slightly soluble in dilute nitric acid by analysis of filtrate samples

BeO Standard Stability Time Studies



Solubility Study of BeO Suspension Slurry



Proficiency Testing-Methodology Confirmation

- Request DOE funds (Dave Weitzman) to be given to volunteer DOE labs to purchase BeO standard from same lot & perform data analysis
- Request volunteer labs to create a sample using the material (instructions to be provided to labs)
- Labs perform analysis and report data

BePAT Expansion Considerations

- Determine what information the program will provide:
 - Accuracy and/or precision
 - Address matrix, digestion, and/or substrate concerns
 - Interference Corrections
 - Address minimum or maximum analysis capabilities
 - Address differences between available technologies
- Lab capabilities are multi-tiered
- Develop a program to meet specific needs