

April 11, 2025

Mr. Mick Leat
Land Quality Bureau
Iowa Department of Natural Resources
6200 Park Avenue, Suite 200
Des Moines, Iowa 50321



**RE: 2025 Spring Water Quality Notification
South Central Iowa Landfill Agency (SCILA) 61-SDP-1-78P**

Dear Mr. Leat:

HMSP

The 2025 HMSP includes the monitoring points listed in Table 1.

Interwell Statistics are utilized to evaluate the unconsolidated system (System #1) and the Exline System (System #4) at this facility. Water sampling at MW-45D (Exline) was initiated in advance of the acceptance of waste in the Cell A/Cell B Expansion Area. Intrawell Statistical Evaluations will be performed at MW-45D in addition to the Interwell Statistical evaluations performed at all Exline System monitoring wells (Attachment A).

GU-2, GU-A, GU-B, and MW-45A are all completed in the Ladore Shale and represent the uppermost water bearing unit below the Cell A and Cell B Expansion Area. IDNR approved the use of Intrawell Statistical Evaluation of GU-2, GU-A, GU-B, and MW-45A, given that each point had water samples collected in advance of waste placement in Cell A and Cell B. The intrawell statistics will commence at each respective point when a minimum of eight (8) rounds of data are available for the background at that given point. To date seven (7) samples have been collected from GU-2 and GU-B, while six (6) samples have been collected from GU-A, and four (4) samples have been collected from MW45A (Attachment A).

INTERWELL STATISTICS

Wells in the Detection Monitoring System

Verified Prediction Limit exceedance(s) for **inorganic compounds**:

None.

Verified Prediction Limit exceedance(s) for **VOC** include:

None.

Wells in the Assessment Monitoring System

Verified **inorganic** compound detections that exceed the Prediction Limit:

- MW-6A (Bethany Falls) - cobalt
- MW-44 (Till/Bedrock) - barium
- Tile 1 (Till/Bedrock) - barium
- Tile 2 (Till/Bedrock) - None
- MW-21 (Till/Bedrock) - None
- MW-17R (Exline) – barium, nickel
- MW-14D (Exline) - None
- MW-28 (Exline-Fill) – arsenic, barium, cobalt, nickel
- MW-45D (Exline) – arsenic*

* *Pending the conclusions of the Intrawell Statistical Evaluations in 2028.*

Verified **VOC** detections that exceed the Prediction Limit:

- MW-6A (Bethany Falls) – None
- MW-44 (Till/Bedrock) - bis(2-ethylhexyl)phthalate
- Tile 1 (Till/Bedrock) - 1,4-dichlorobenzene, benzene, chlorobenzene
- Tile 2 (Till/Bedrock) - cis-1,2-dichloroethene
- MW-21 (Till/Bedrock) - None
- MW-17R (Exline) – None
- MW-14D (Exline) - None
- MW-28 (Exline-Fill) – cis-1,2-dichloroethene
- MW-45D (Exline) – None

INTRAWELL STATISTICS

Pending the compilation of a sufficient background database.

Assessment Monitoring

A summary of all Assessment Monitoring (Appendix II) sampling is included in Table 2. There have been no compounds in the full Appendix II Compound list detected at any well on the site, with the exception of bis(2-ethylhexyl) phthalate. The request to discontinue bis (2-ethylhexyl) phthalate sampling at assessment monitoring points, except during the required full Appendix II sampling events on the five (5) year frequency was approved by IDNR on June 9, 2017 (Doc #89661).

Current Appendix II Compound Detections

- MW-44 (Till/Bedrock) - bis(2-ethylhexyl)phthalate

Passive Engineered Conveyance Structure Monitoring

In compliance. There were no verified **VOC** detections at SW-102.

Wells in the Corrective Action Monitoring System

Verified VOC detections:

- MW-31 (Till/Bedrock) – None
- MW-32 (Till/Bedrock) – chlorobenzene
- LW-26 (MSW Source) – benzene, chlorobenzene

Supplemental Wells

Verified VOC detections:

- MW-8B (Till/Bedrock) - None.
- MW-9AR (Till/Bedrock) – cis-1,2-dichloroethene, trans-1,2-dichloroethene, TCE
- MW-15R (Till/Bedrock) – None.

Inorganic compound concentrations at Supplemental Wells (MW-8B, MW-9AR, and MW-15R) continue to be monitored and the detected metal concentrations are tracked on time series plots (Attachment B). No increasing trends in inorganic compound concentrations are detected, except arsenic at MW-15R.

The water quality of the Supplemental Wells will be fully evaluated in the Annual Water Quality Report as required.

Recorded Statistically Significant Levels (SSL)

There were no SSL detected at any point of compliance (POC) well or at any attenuation zone point of compliance (AZPOC) well. The exception is MW-28 where the 95% LCL for cobalt exceeds the GWPS. An Alternate Source Demonstration (ASD) has been completed at MW-28 and indicates that natural subsurface conditions at MW-28 are the cause of the elevated metal concentrations.

Wells returning to the detection monitoring system

None.

This notification is intended to satisfy requirements of Iowa Administrative Code (IAC) 567-113.10(5)"c"(1); 113.10(6)"d"(1); and 113.10(6)"g". The water quality results for the Spring of 2025 will be fully evaluated in the Annual Water Quality Report in accordance with the permit and IAC 567-113.10(10).

Please feel free to contact our office at (515) 733-4144 with any questions you may have.

Sincerely,

HLW Engineering Group



Todd Whipple, CPG
Project Manager

cc: Marcia Beeler, Manager

Table 1 - Hydrologic Monitoring System Plan (HMSP)

Point	Groundwater System	Water System #	Use	Screen Length	Program	Analyses 3-11-2025/Fall-2025
MW-4A	Till(fill)/bedrock	#1	Background	5 ft	Detection - Historic	Plugged
MW-34A	Till(fill)/bedrock	#1	Background	10 ft	Detection	Appendix I/Appendix I
MW-18	Till(fill)/bedrock	#1	Background	10 ft	Detection	Note ⁽³⁾ /Appendix I
MW-38A	Till(fill)/bedrock	#1	Background	5 ft	Detection	Dry/Appendix I
GU-1	Till(fill)/bedrock	#1	West Lagoon POC	N/A	Detection	Dry/Appendix I
GU-2	Ladore Shale	#1	East Lagoon POC	N/A	Detection	Appendix I/Appendix I
GU-A	Ladore Shale	#1	Cell A Underdrain	N/A	Detection	Appendix I/Appendix I
GU-B	Ladore Shale	#1	Cell B Underdrain	N/A	Detection	Appendix I/Appendix I
MW-45A	Pleasanton Shale	#1	Downgradient POC	3 ft	Detection	Appendix I/Appendix I
MW-1R	Till(fill)/bedrock	#1	downgradient POC	10 ft	Detection	Dry/Appendix I
MW-15R	Till(fill)/bedrock	#1	downgradient POC	5 ft	Supplemental	Appendix I ⁽²⁾ /Appendix I ⁽²⁾
MW-44	Till(fill)/bedrock	#1	downgradient POC	5 ft	AZPOC	Appendix II /Appendix I ⁽¹⁾
MW-6A	Bethany Falls	#1	downgradient POC	5 ft	Assessment	Appendix II /Appendix I
MW-9AR	Till(fill)/bedrock	#1	downgradient	10 ft	Supplemental	Appendix I ⁽²⁾ /Appendix I ⁽²⁾
Tile 1	Till(fill)/bedrock	#1	downgradient POC	N/A	AZPOC	Appendix I/Appendix I
Tile 2	Till(fill)/bedrock	#1	downgradient POC	N/A	AZPOC	Appendix I/Appendix I
MW-8B	Till(fill)/bedrock	#1	downgradient	10 ft	Supplemental	Appendix I ⁽²⁾ /Appendix I ⁽²⁾
MW-21	Till(fill)/bedrock	#1	downgradient POC	10 ft	AZPOC	Appendix I/Appendix I
MW-11C	Exline	#4	Background	1 ft	Detection	Appendix I/Appendix I
MW-39D	Exline	#4	Background	3 ft	Detection	Note ⁽³⁾ / Note ⁽³⁾
MW-41D	Exline	#4	Background	3 ft	Detection	Note ⁽³⁾ / Note ⁽³⁾
MW-42D	Exline	#4	Background	2 ft	Detection	Note ⁽³⁾ / Note ⁽³⁾
MW-45D	Exline	#4	downgradient POC	3 ft	Detection	Appendix I/Appendix I
MW-17R	Exline	#4	downgradient POC	3 ft	Assessment	Appendix I/Appendix I
MW-14D	Exline	#4	downgradient	5 ft	Assessment	Appendix I ⁽¹⁾ / Appendix I
MW-28	Exline*	#4	downgradient POC	5 ft	AZPOC	Appendix I/Appendix I
SW-1	Surface Water	#5	Background	N/A	Detection	Note ⁽⁴⁾ / Note ⁽⁴⁾
SW-2B	Surface Water	#5	downgradient POC	N/A	Detection	Note ⁽⁴⁾ / Note ⁽⁴⁾
SW-102	PECS	#1, #4	downgradient POC	N/A	Compliance	Note ⁽⁴⁾ / Note ⁽⁴⁾
MW-31	Till(fill)/bedrock	#1	Plume	5 ft	CA	Note ⁽⁴⁾ - Annual
MW-32	Till(fill)/bedrock	#1	Plume	5 ft	CA	As+Note ⁽⁴⁾ - Annual
LW-26	MSW-leachate	#1	Source	40 ft	CA	Note ^(2,4,5) - Annual
Vent 1	Till(fill)/bedrock	#1	Gas Source	10 ft	CA	% LEL Quarterly
Vent 2	Till(fill)/bedrock	#1	Gas Source	10 ft	CA	% LEL Quarterly
Vent 3	Till(fill)/bedrock	#1	Gas Source	10 ft	CA	% LEL Quarterly
Vent 4	Till(fill)/bedrock	#1	Gas Source	10 ft	CA	% LEL Quarterly
Vent 5	Till(fill)/bedrock	#1	Gas Source	10 ft	CA	% LEL Quarterly
Vent 6	Till(fill)/bedrock	#1	Gas Source	10 ft	CA	% LEL Quarterly

Table 1 Notes

* – MW-28 does not intersect the Exline, the screen interval is in unconsolidated fill materials at the approximate elevation of the truncated edge of the Exline formation.

Note(1) = Appendix I plus bis(2-ethylhexyl)phthalate

Note(2) = dissolved methane, ethane, ethene, alkalinity, and pH

Note(3) = Appendix I metals

Note(4) = Appendix I VOC only

Note(5) = cobalt, ammonia (as N), sulfate, chloride, TDS, and BOD⁵

CA = Corrective Action Monitoring System

Table 2 - Historic Appendix II Compound Detections
 Bis(2-ethylhexyl)phthalate (green highlights = a full Appendix II sample)

Date	MW-9A/9AR*	MW-8B*	MW-15/15R*
6/8/2009	< 8	NT	NT
10/23/2009	< 11	NT	NT
1/27/2010	NT	< 8	NT
3/19/2010	NT	< 9.5	NT
9/14/2010	9.0	NT	NT
3/4/2011	< 10	NT	NT
3/13/2012	< 10	NT	NT
9/19/2012	< 10	NT	NT
3/5/2013	< 10	NT	NT
9/12/2013	< 10	NT	NT
3/28/2014	< 10	NT	NT
9/23/2014	< 10	NT	NT
3/19/2015	< 10	NT	NT
8/27/2015	< 10	NT	NT
3/4/2016	< 8	< 8	NT
9/20/2016	< 10	NT	NT
3/9/2017	< 10	NT	12.0
6/6/2017	NT	NT	<6
9/14/2017	NT	NT	NT
3/13/2018	NT	NT	<6
9/10/2018	NT	NT	NT
3/26/2019	NT	NT	NT
6/5/2019	NT	NT	NT
9/16/2019	NT	NT	NT
3/24/2020	NT	NT	NT
9/2/2020	NT	NT	NT
3/8/2021	NT	NT	NT
9/14/2021	NT	NT	NT
3/28/2022	NT	NT	NT
9/13/2022	NT	NT	NT
3/23/2023	NT	NT	NT
9/5/2023	NT	NT	NT
3/6/2024	NT	NT	NT
9/18/2024	NT	NT	NT
3/11/2025	NT	NT	NT

* - Supplemental wells do not require full Appendix II sampling on the five (5) year frequency.

Bis(2-ethylhexyl)phthalate (green highlights =a full Appendix II sample)

Date	MW-6A	MW-14D	MW-17R	Tile 1	Tile 2	MW-28	MW-44
8/27/2015	NT	NT	NT	NT	NT	NT	NT
3/4/2016	NT	NT	< 8	NT	NT	NT	NT
9/20/2016	NT	NT	NT	NT	NT	NT	NT
3/9/2017	NT	NT	< 8	NT	NT	NT	NT
6/6/2017	NT	NT	NT	NT	NT	NT	NT
9/14/2017	NT	<6	NT	NT	NT	NT	NT
3/13/2018	NT	< 8	NT	NT	NT	NT	NT
9/10/2018	NT	NT	NT	NT	NT	NT	NT
3/26/2019	55.0	NT	NT	NT	NT	NT	NT
6/5/2019	< 6	NT	NT	NT	NT	NT	NT
9/16/2019	NT	NT	NT	NT	NT	NT	NT
3/24/2020	7.0	NT	NT	NT	NT	NT	NT
9/2/2020	NT	NT	NT	NT	NT	NT	NT
3/8/2021	< 6	NT	NT	<6	<6	<6	NT
9/14/2021	< 6	NT	NT	NT	NT	NT	NT
3/28/2022	< 6	NT	13.0	<6	<6	<6	NT
9/13/2022	NT	NT	< 6	NT	NT	NT	NT
3/23/2023	NT	NT	NT	NT	NT	NT	NT
9/5/2023	NT	NT	NT	NT	NT	NT	NT
3/6/2024	NT	10.0	NT	NT	NT	NT	14.0
9/18/2024	NT	< 6	NT	NT	NT	NT	10.0
3/11/2025	<6	< 6	NT	NT	NT	NT	6.0

Attachment A
Intrawell Statistical Report

Table 1

Summary Statistics and Intermediate Computations
for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Antimony, total	ug/L	GU-2	7	0	7										*
Arsenic, total	ug/L	GU-2	7	0	7										**
Barium, total	ug/L	GU-2	7	0	7										*
Beryllium, total	ug/L	GU-2	7	0	7										**
Cadmium, total	ug/L	GU-2	7	0	7										*
Chromium, total	ug/L	GU-2	7	0	7										**
Cobalt, total	ug/L	GU-2	7	0	7										*
Copper, total	ug/L	GU-2	7	0	7										**
Lead, total	ug/L	GU-2	7	0	7										*
Nickel, total	ug/L	GU-2	7	0	7										**
Selenium, total	ug/L	GU-2	7	0	7										*
Silver, total	ug/L	GU-2	7	0	7										**
Thallium, total	ug/L	GU-2	7	0	7										*
Vanadium, total	ug/L	GU-2	7	0	7										**
Zinc, total	ug/L	GU-2	7	0	7										*
Antimony, total	ug/L	GU-A	6	0	6										*
Arsenic, total	ug/L	GU-A	6	0	6										**
Barium, total	ug/L	GU-A	6	0	6										*
Beryllium, total	ug/L	GU-A	6	0	6										**
Cadmium, total	ug/L	GU-A	6	0	6										*
Chromium, total	ug/L	GU-A	6	0	6										**
Cobalt, total	ug/L	GU-A	6	0	6										*
Copper, total	ug/L	GU-A	6	0	6										**
Lead, total	ug/L	GU-A	6	0	6										*
Nickel, total	ug/L	GU-A	6	0	6										**
Selenium, total	ug/L	GU-A	6	0	6										*
Silver, total	ug/L	GU-A	6	0	6										**
Thallium, total	ug/L	GU-A	6	0	6										*
Vanadium, total	ug/L	GU-A	6	0	6										**
Zinc, total	ug/L	GU-A	6	0	6										*
Antimony, total	ug/L	GU-B	7	0	7										*
Arsenic, total	ug/L	GU-B	7	0	7										**
Barium, total	ug/L	GU-B	7	0	7										*
Beryllium, total	ug/L	GU-B	7	0	7										**
Cadmium, total	ug/L	GU-B	7	0	7										*
Chromium, total	ug/L	GU-B	7	0	7										**
Cobalt, total	ug/L	GU-B	7	0	7										*
Copper, total	ug/L	GU-B	7	0	7										**
Lead, total	ug/L	GU-B	7	0	7										*
Nickel, total	ug/L	GU-B	7	0	7										**
Selenium, total	ug/L	GU-B	7	0	7										*
Silver, total	ug/L	GU-B	7	0	7										**
Thallium, total	ug/L	GU-B	7	0	7										*
Vanadium, total	ug/L	GU-B	7	0	7										**
Zinc, total	ug/L	GU-B	7	0	7										*
Antimony, total	ug/L	MW-45A	4	0	4										*

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
 N(tot) = All independent measurements for that constituent and well.
 For transformed data, mean and SD in transformed units and control limit in original units.
 Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
 * - Insufficient Data.
 ** - Detection Frequency < 25%.
 *** - Zero Variance.

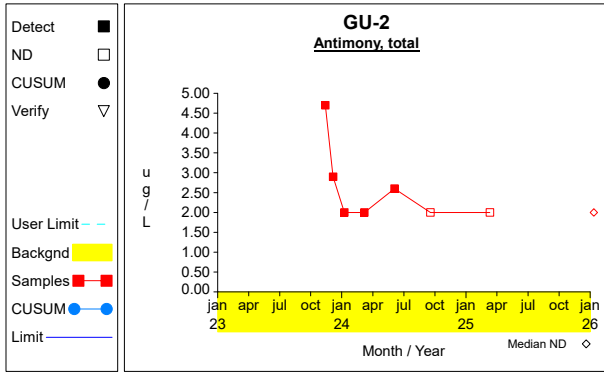
Table 1

Summary Statistics and Intermediate Computations
for Combined Shewhart-CUSUM Control Charts

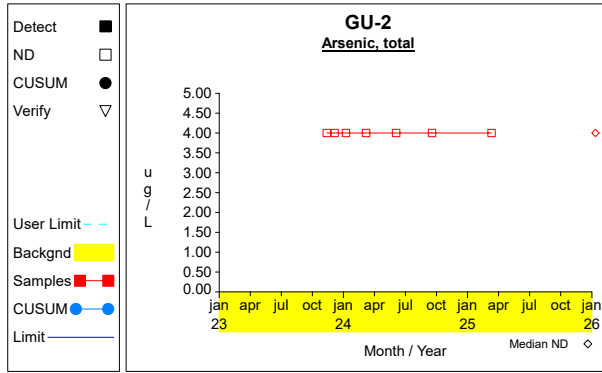
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Arsenic, total	ug/L	MW-45A	4	0	4										*
Barium, total	ug/L	MW-45A	4	0	4										**
Beryllium, total	ug/L	MW-45A	4	0	4										**
Cadmium, total	ug/L	MW-45A	4	0	4										*
Chromium, total	ug/L	MW-45A	4	0	4										*
Cobalt, total	ug/L	MW-45A	4	0	4										*
Copper, total	ug/L	MW-45A	4	0	4										*
Lead, total	ug/L	MW-45A	4	0	4										*
Nickel, total	ug/L	MW-45A	4	0	4										*
Selenium, total	ug/L	MW-45A	4	0	4										*
Silver, total	ug/L	MW-45A	4	0	4										*
Thallium, total	ug/L	MW-45A	4	0	4										*
Vanadium, total	ug/L	MW-45A	4	0	4										*
Zinc, total	ug/L	MW-45A	4	0	4										*
Antimony, total	ug/L	MW-45D	4	0	4										*
Arsenic, total	ug/L	MW-45D	4	0	4										*
Barium, total	ug/L	MW-45D	4	0	4										*
Beryllium, total	ug/L	MW-45D	4	0	4										*
Cadmium, total	ug/L	MW-45D	4	0	4										*
Chromium, total	ug/L	MW-45D	4	0	4										*
Cobalt, total	ug/L	MW-45D	4	0	4										*
Copper, total	ug/L	MW-45D	4	0	4										*
Lead, total	ug/L	MW-45D	4	0	4										*
Nickel, total	ug/L	MW-45D	4	0	4										*
Selenium, total	ug/L	MW-45D	4	0	4										*
Silver, total	ug/L	MW-45D	4	0	4										*
Thallium, total	ug/L	MW-45D	4	0	4										*
Vanadium, total	ug/L	MW-45D	4	0	4										*
Zinc, total	ug/L	MW-45D	4	0	4										*

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
 N(tot) = All independent measurements for that constituent and well.
 For transformed data, mean and SD in transformed units and control limit in original units.
 Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
 * - Insufficient Data.
 ** - Detection Frequency < 25%.
 *** - Zero Variance.

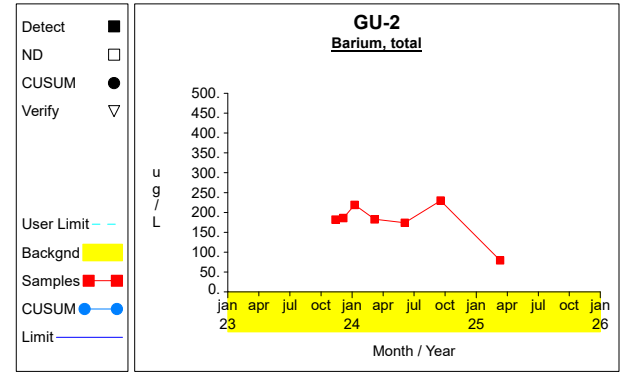
Intra-Well Control Charts / Prediction Limits



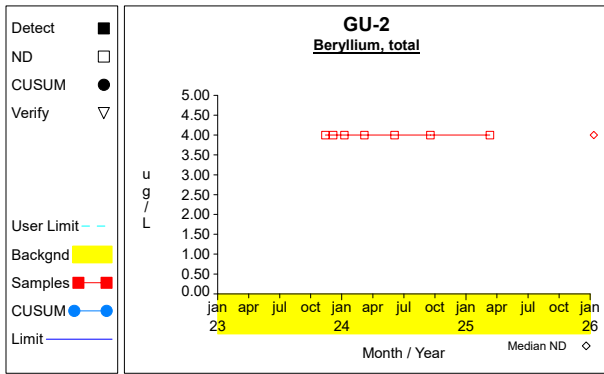
Graph 1



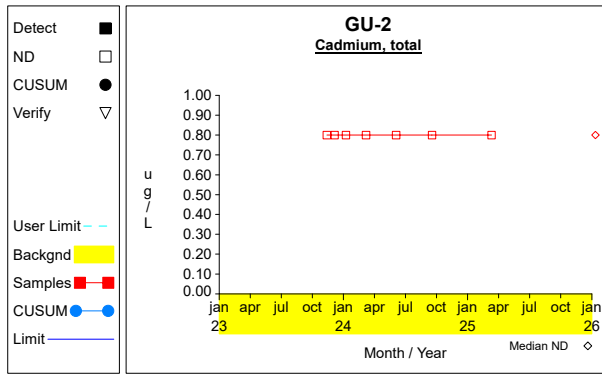
Graph 2



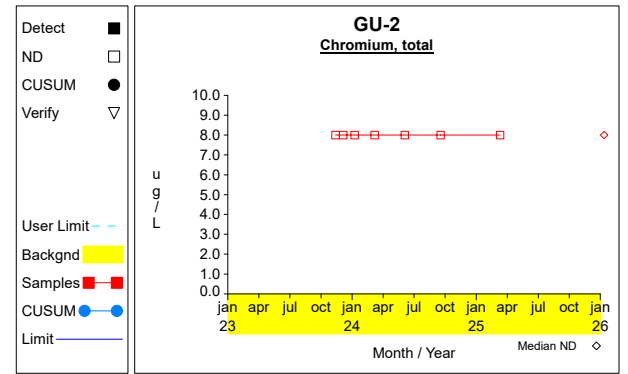
Graph 3



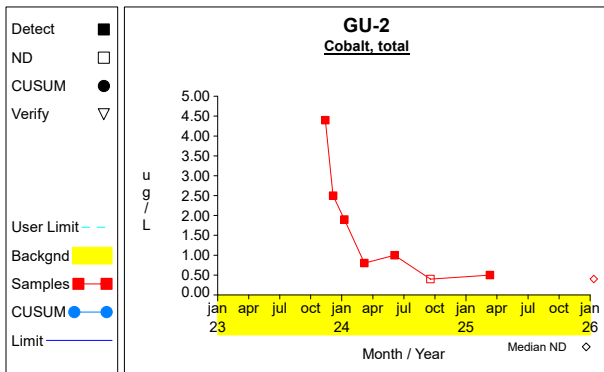
Graph 4



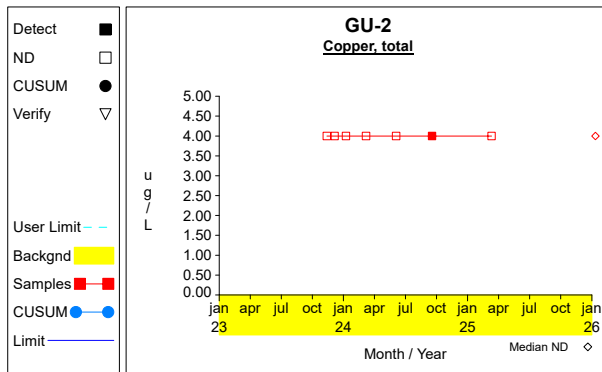
Graph 5



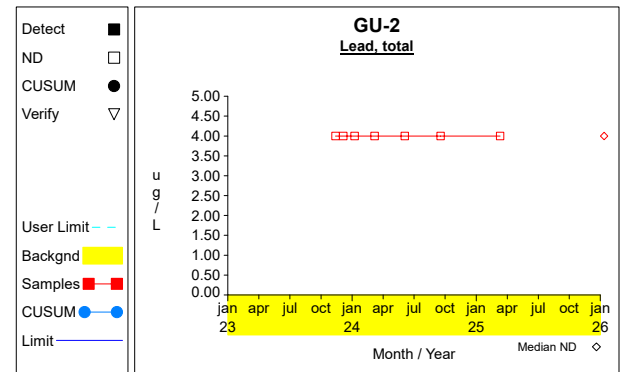
Graph 6



Graph 7

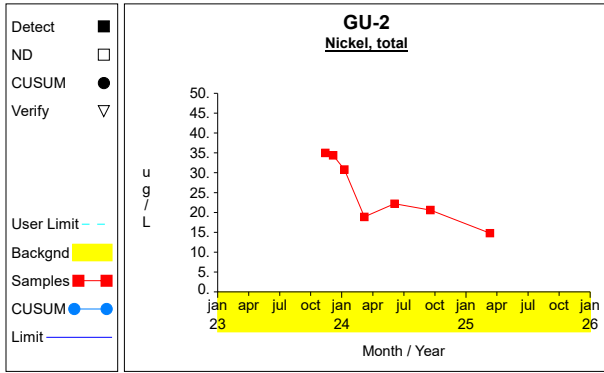


Graph 8

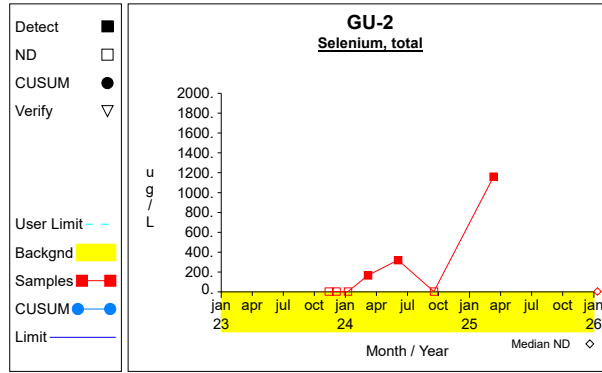


Graph 9

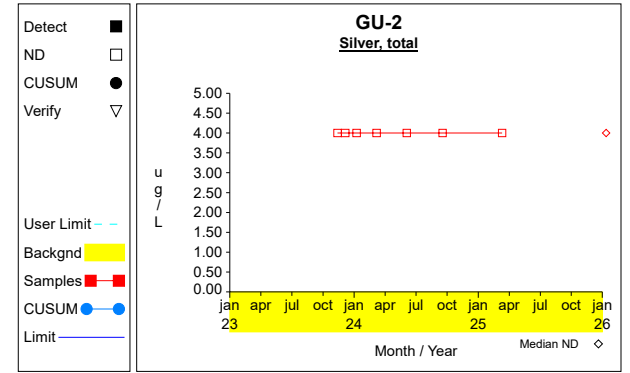
Intra-Well Control Charts / Prediction Limits



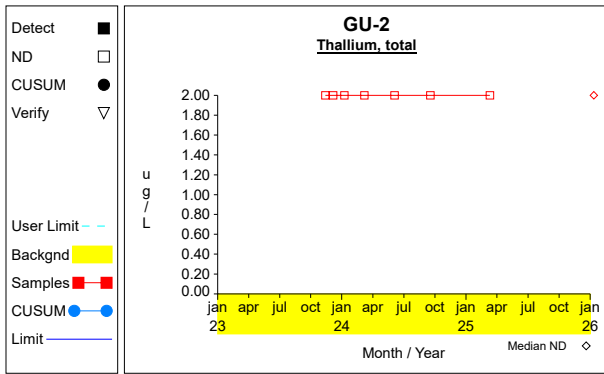
Graph 10



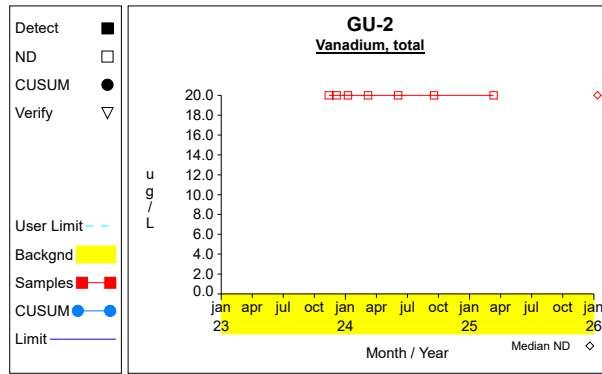
Graph 11



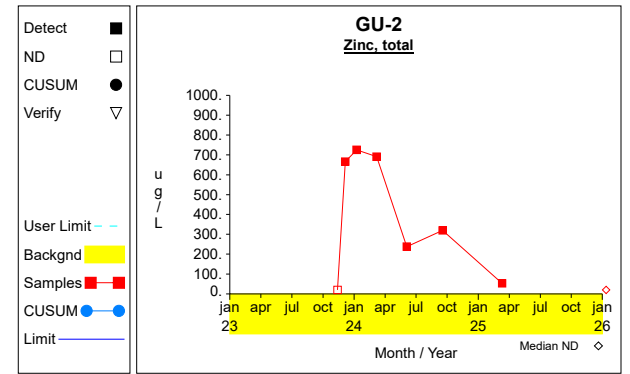
Graph 12



Graph 13

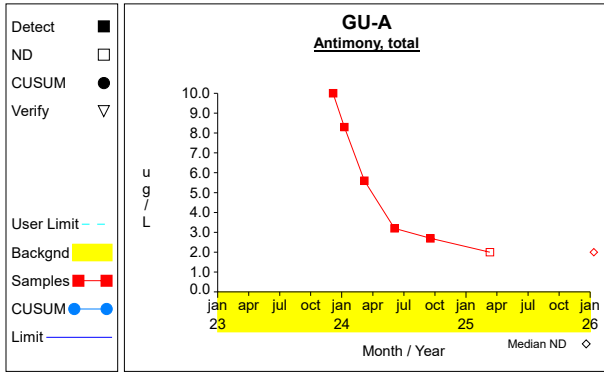


Graph 14

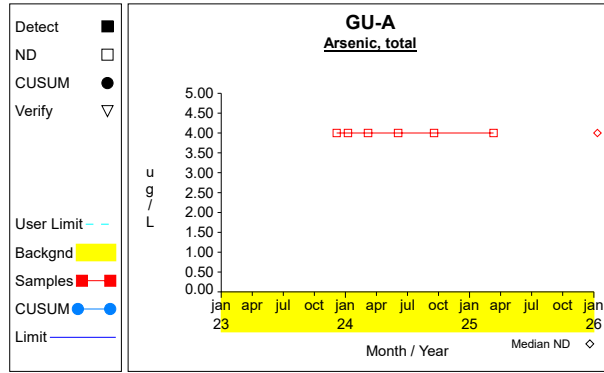


Graph 15

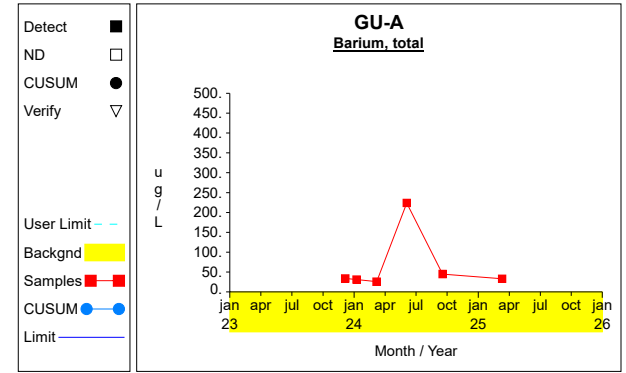
Intra-Well Control Charts / Prediction Limits



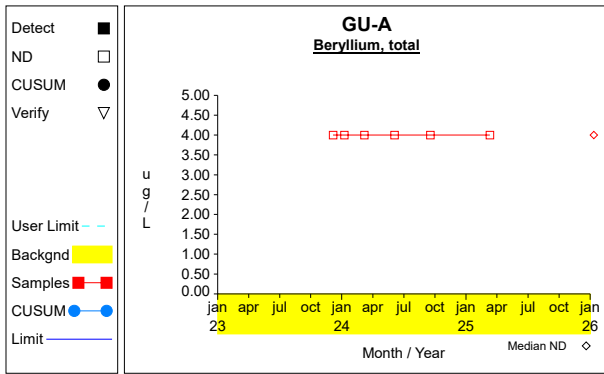
Graph 16



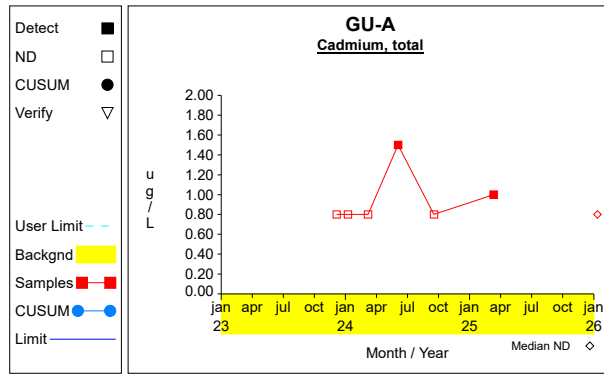
Graph 17



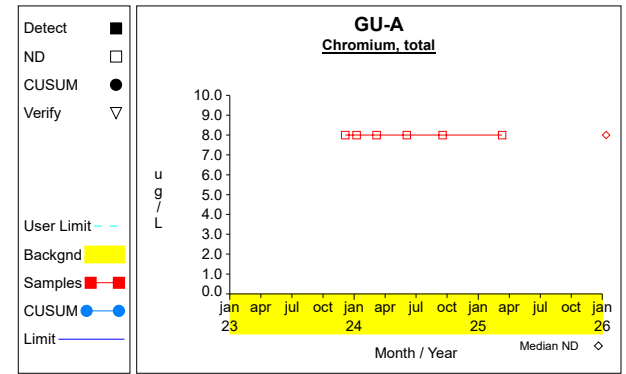
Graph 18



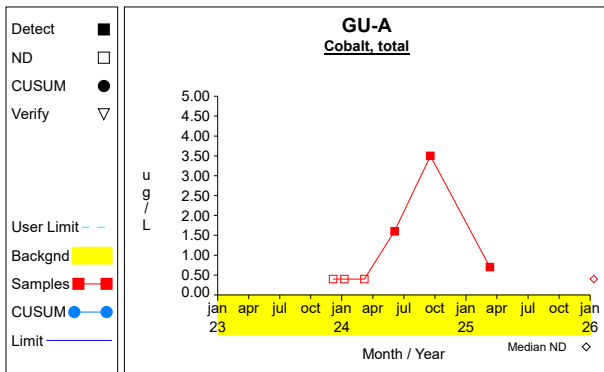
Graph 19



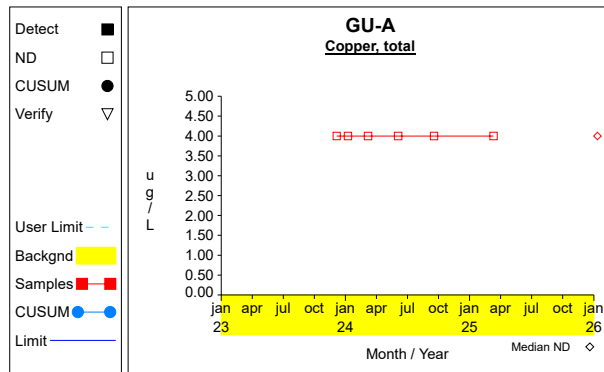
Graph 20



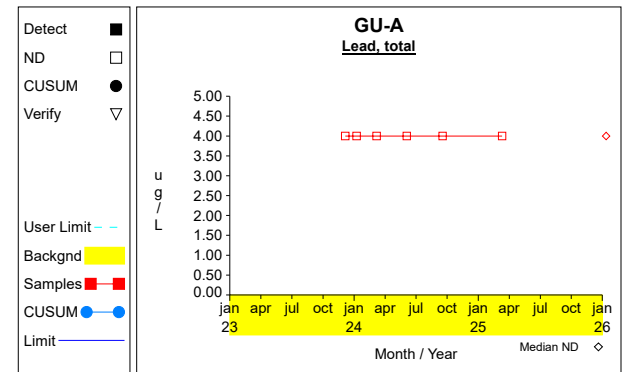
Graph 21



Graph 22

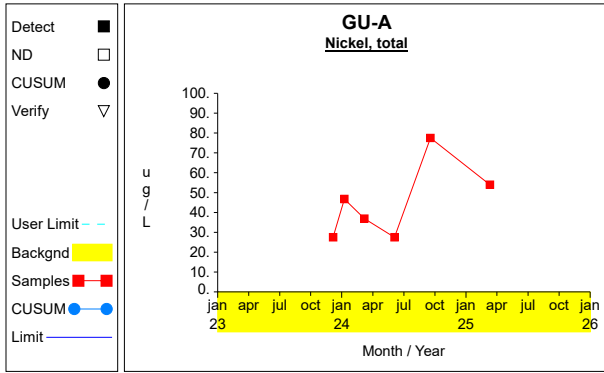


Graph 23

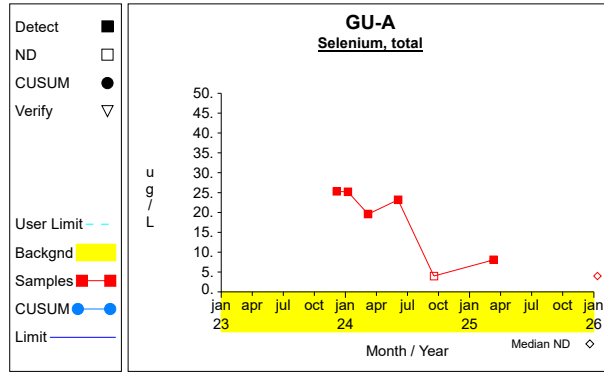


Graph 24

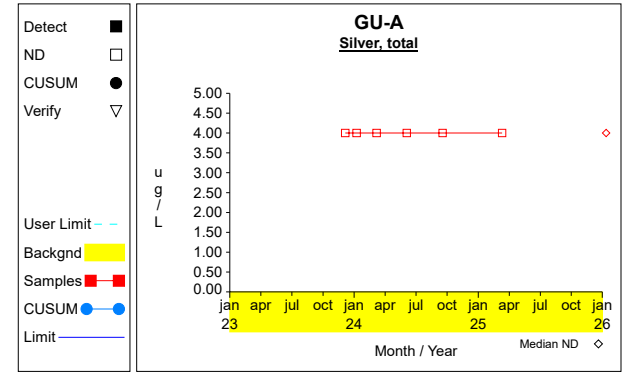
Intra-Well Control Charts / Prediction Limits



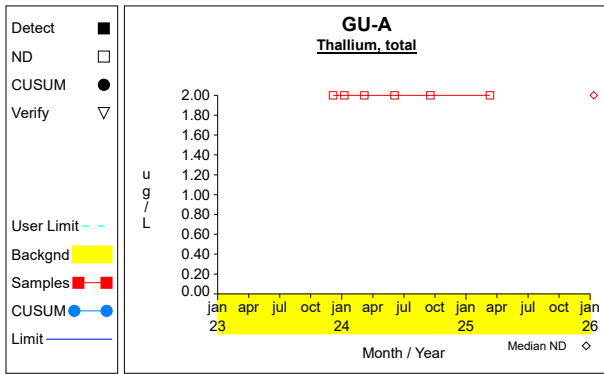
Graph 25



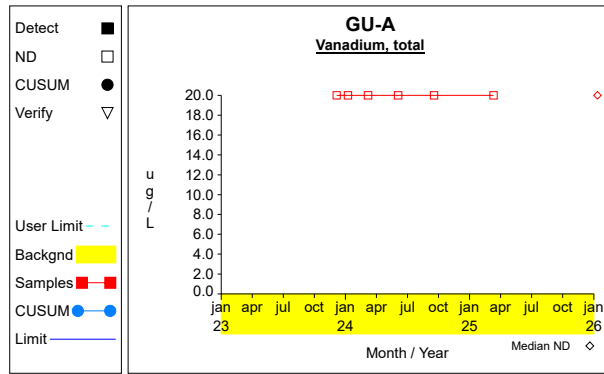
Graph 26



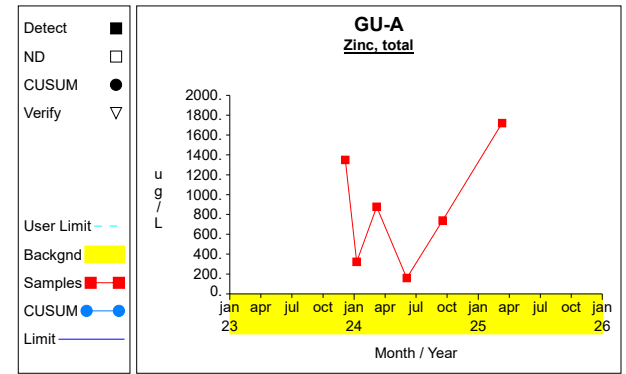
Graph 27



Graph 28

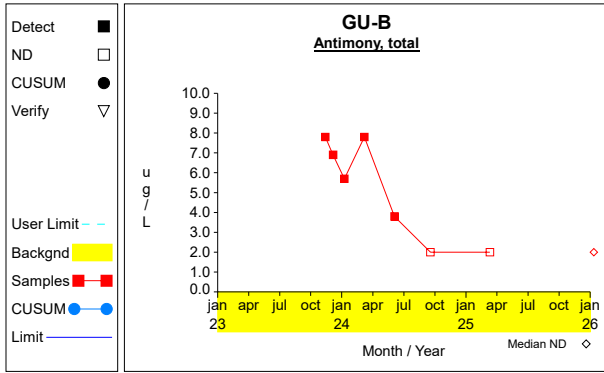


Graph 29

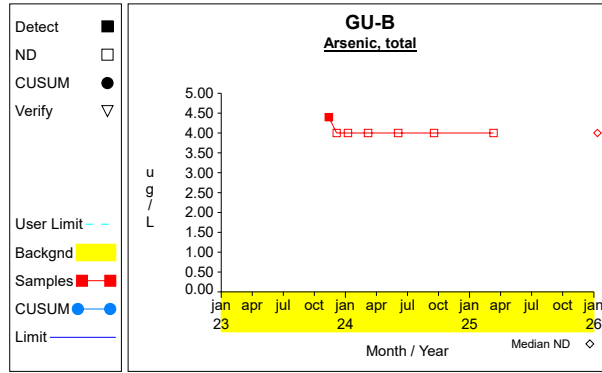


Graph 30

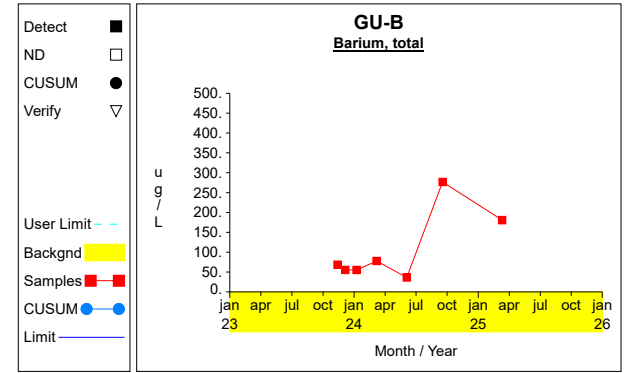
Intra-Well Control Charts / Prediction Limits



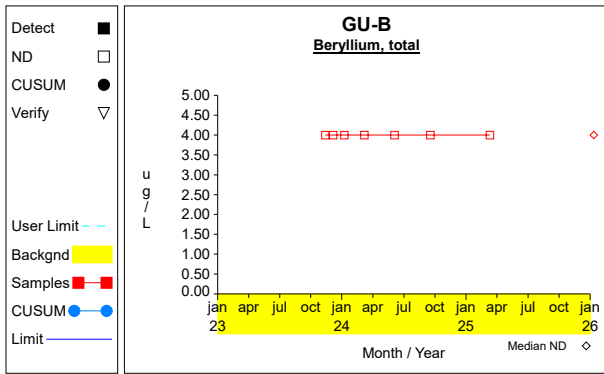
Graph 31



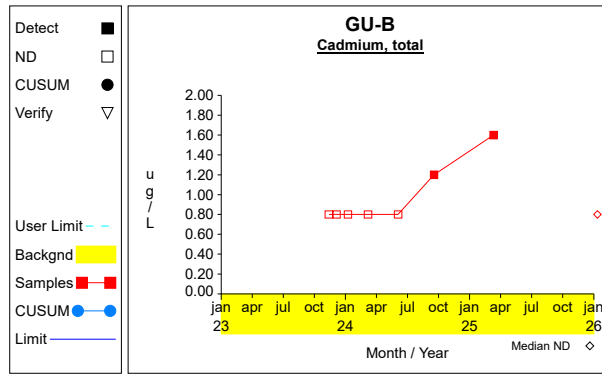
Graph 32



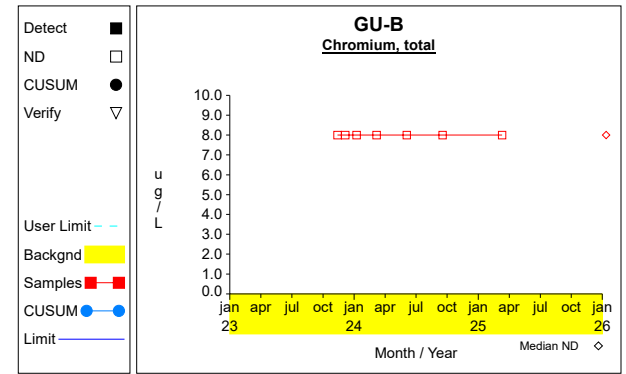
Graph 33



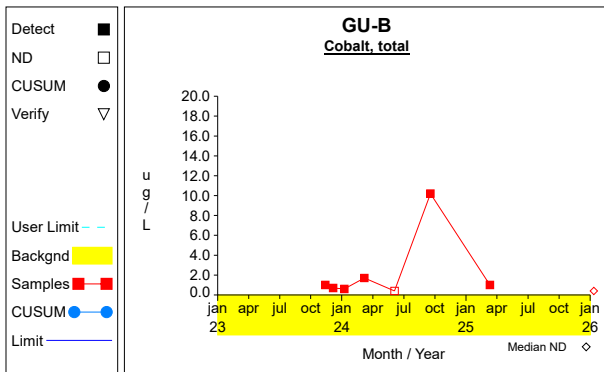
Graph 34



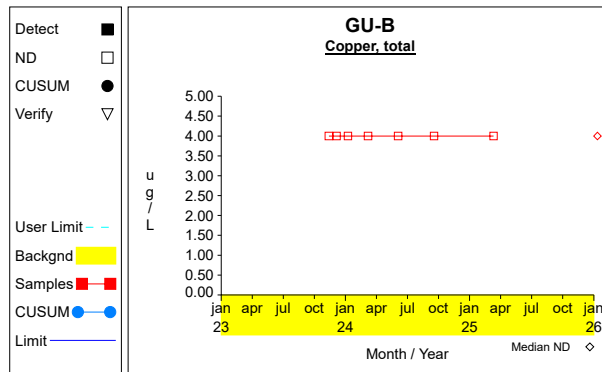
Graph 35



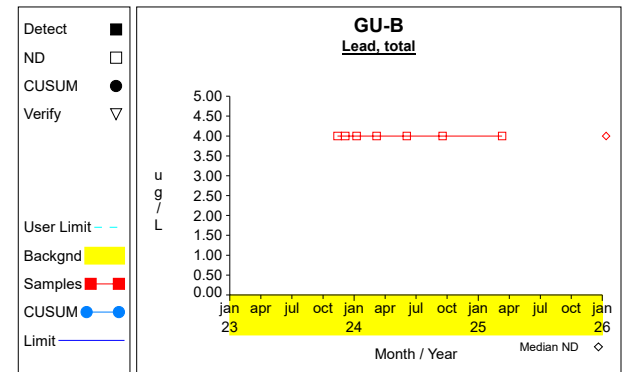
Graph 36



Graph 37

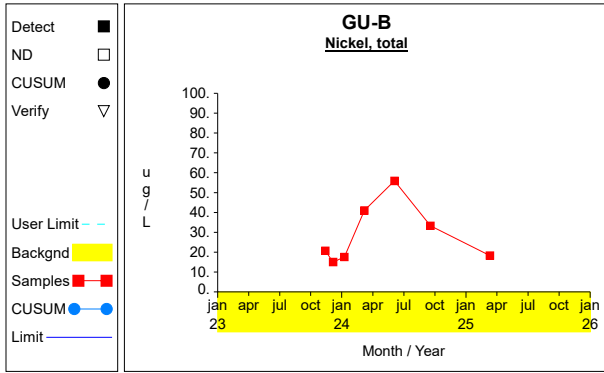


Graph 38

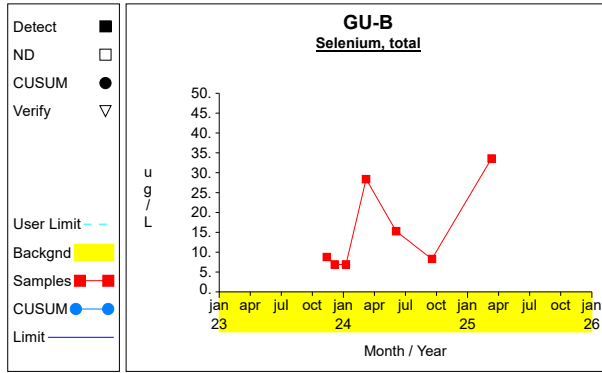


Graph 39

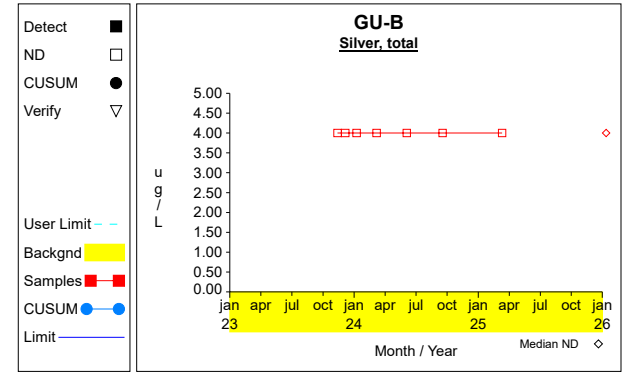
Intra-Well Control Charts / Prediction Limits



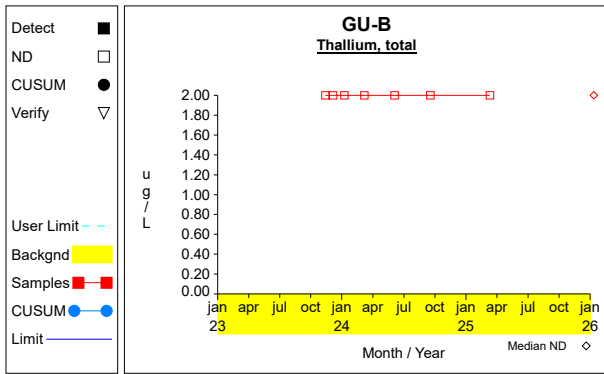
Graph 40



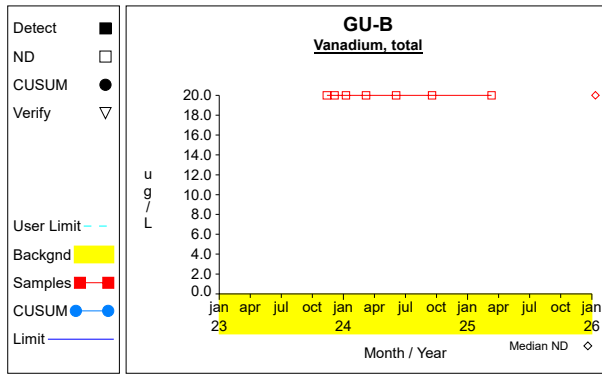
Graph 41



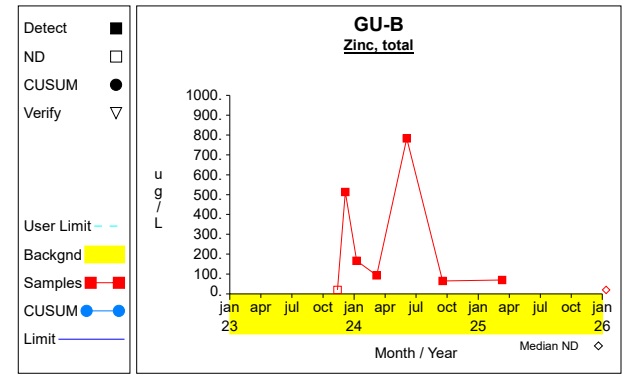
Graph 42



Graph 43

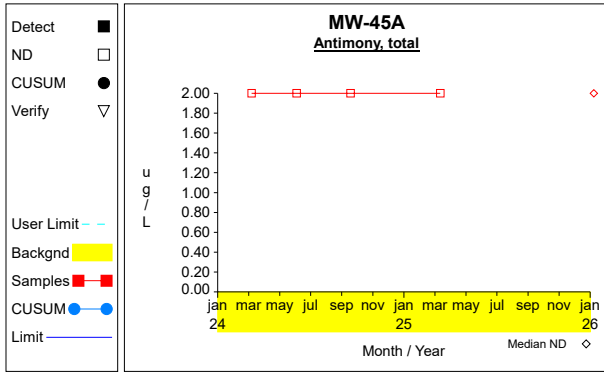


Graph 44

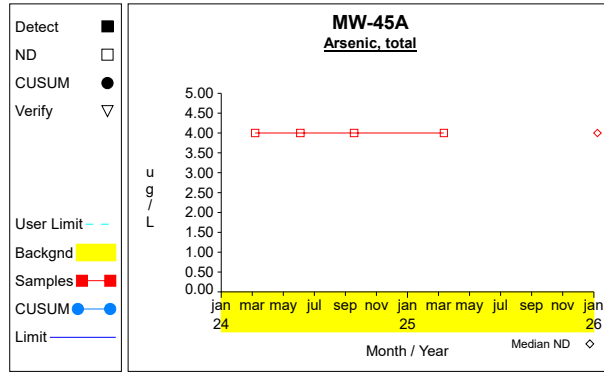


Graph 45

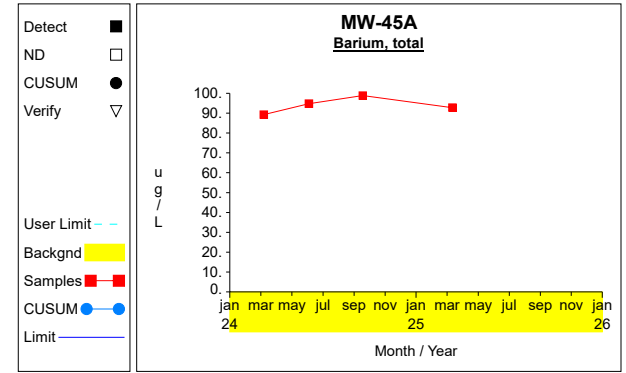
Intra-Well Control Charts / Prediction Limits



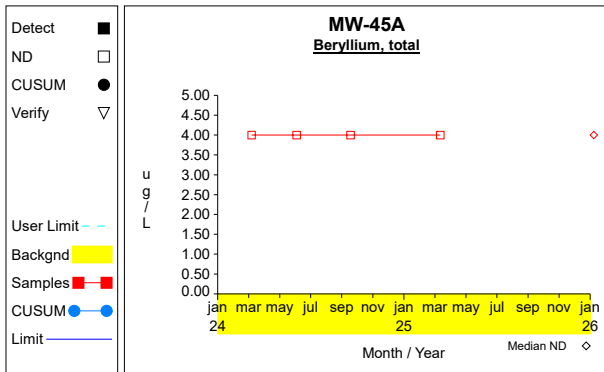
Graph 46



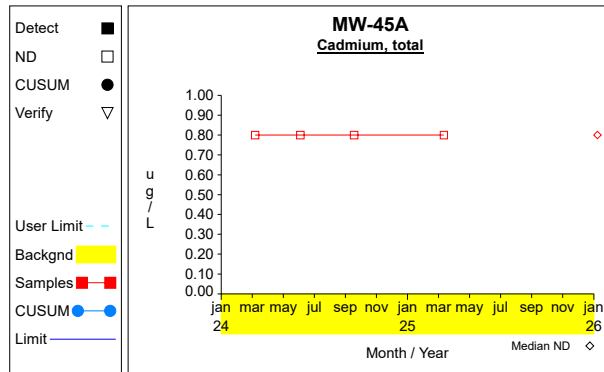
Graph 47



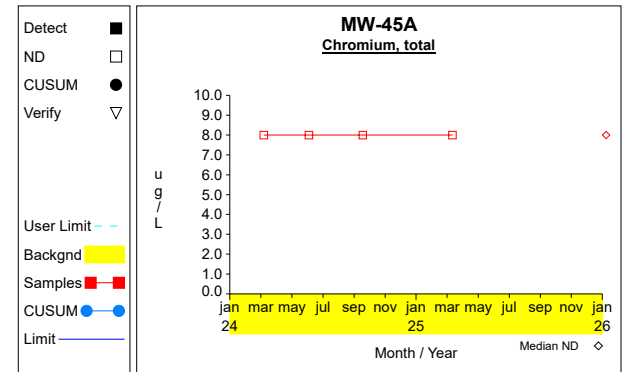
Graph 48



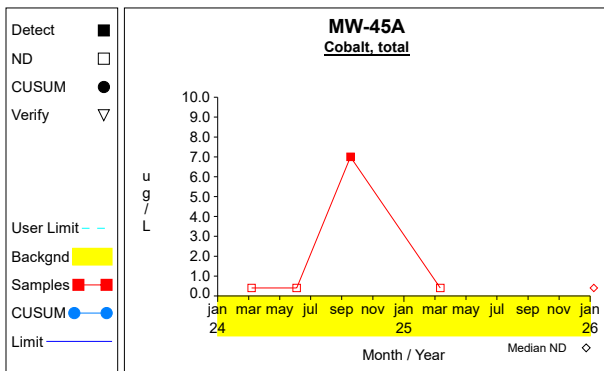
Graph 49



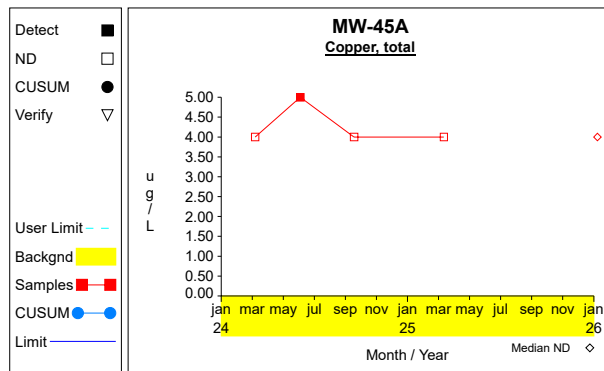
Graph 50



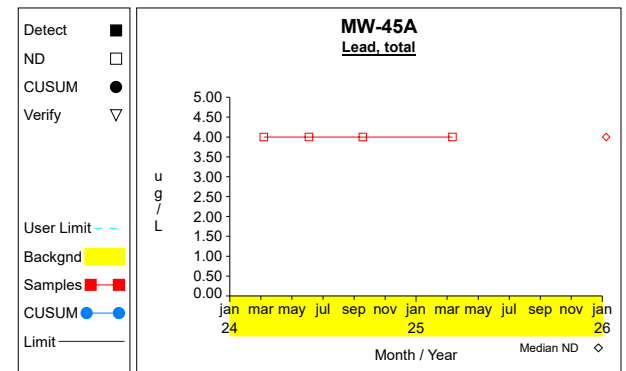
Graph 51



Graph 52

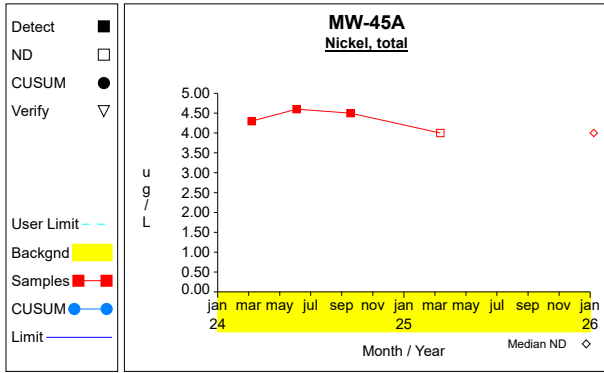


Graph 53

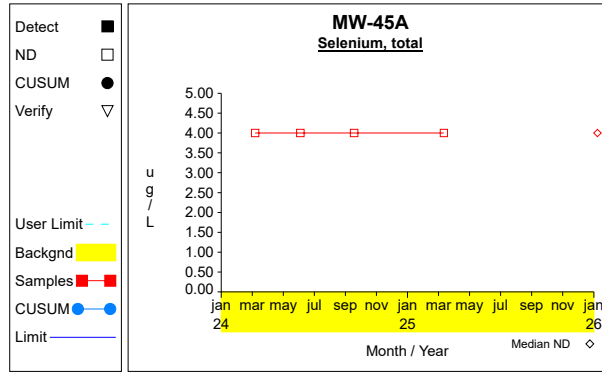


Graph 54

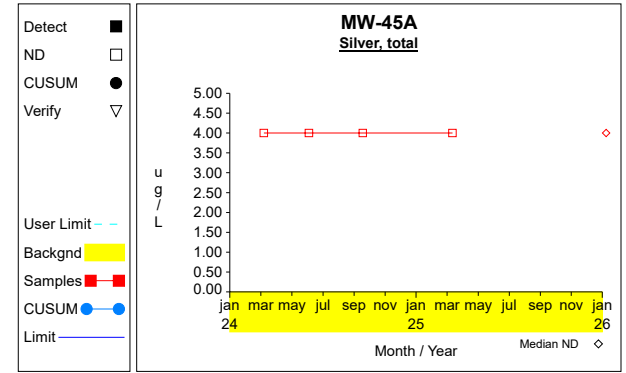
Intra-Well Control Charts / Prediction Limits



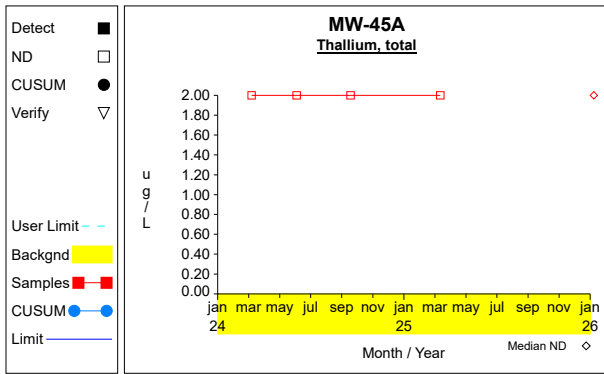
Graph 55



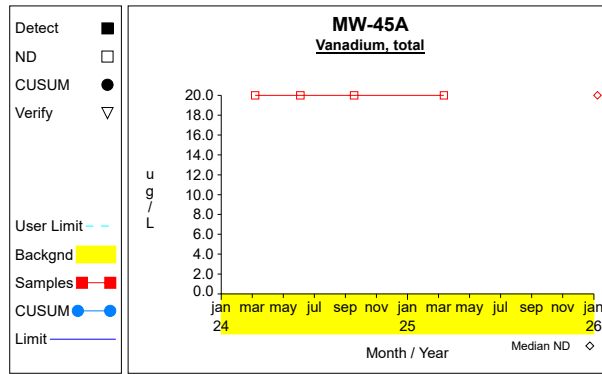
Graph 56



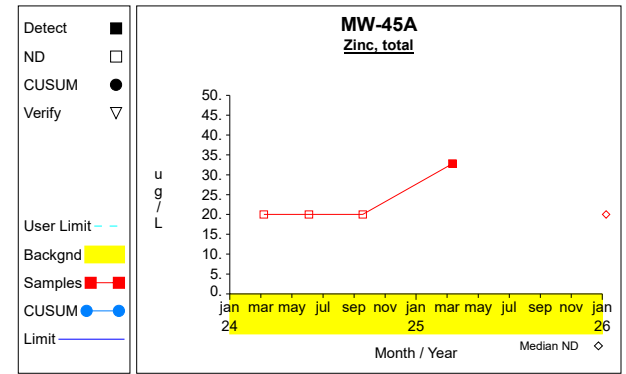
Graph 57



Graph 58

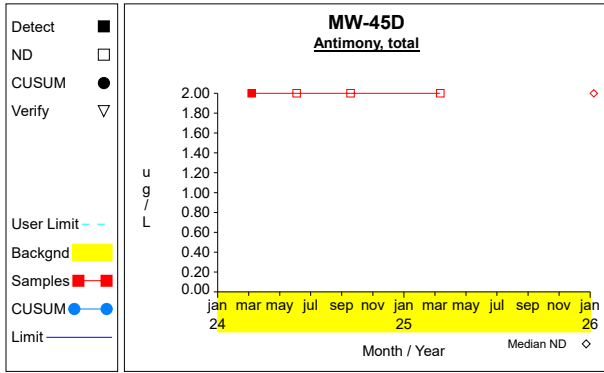


Graph 59

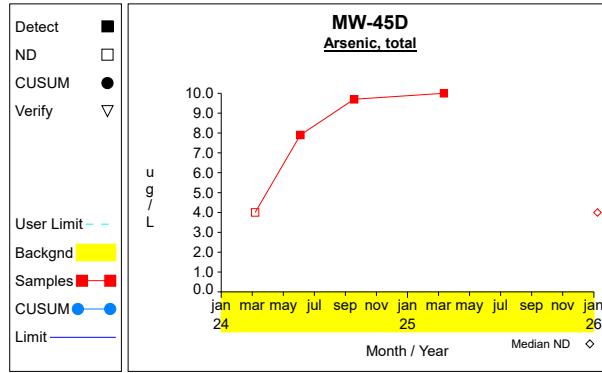


Graph 60

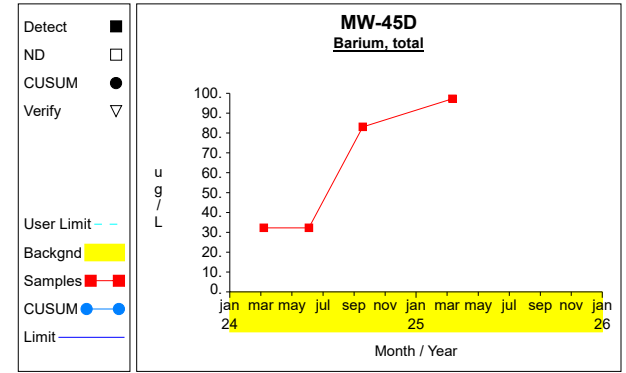
Intra-Well Control Charts / Prediction Limits



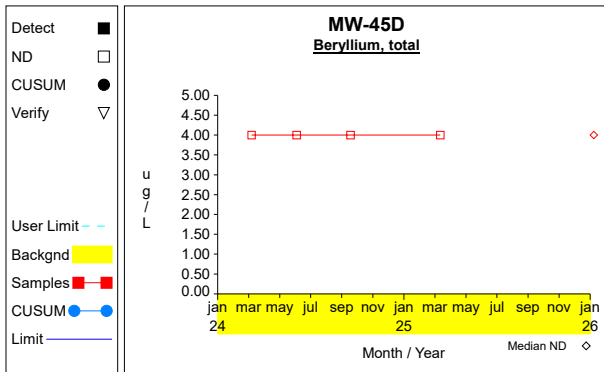
Graph 61



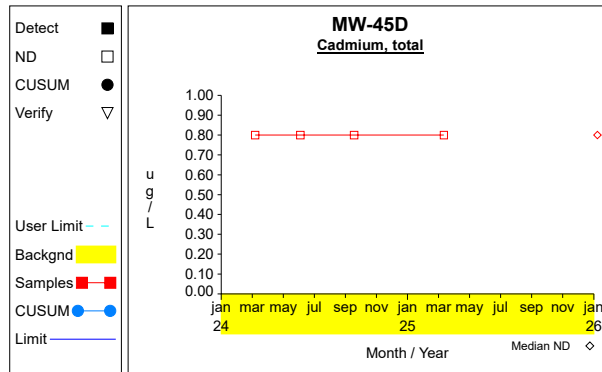
Graph 62



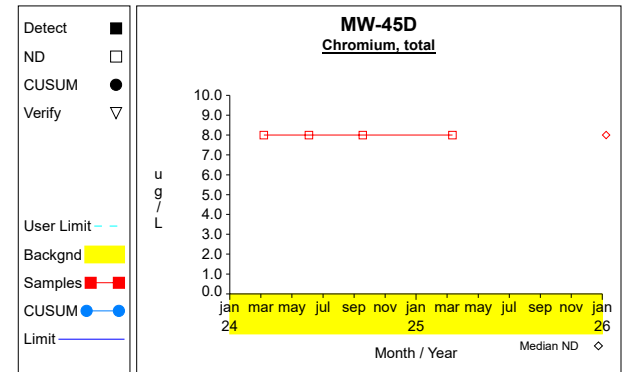
Graph 63



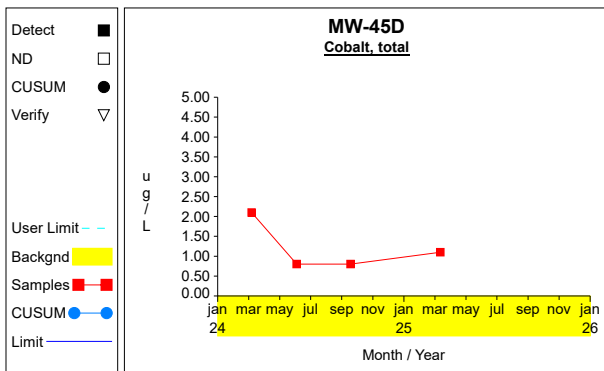
Graph 64



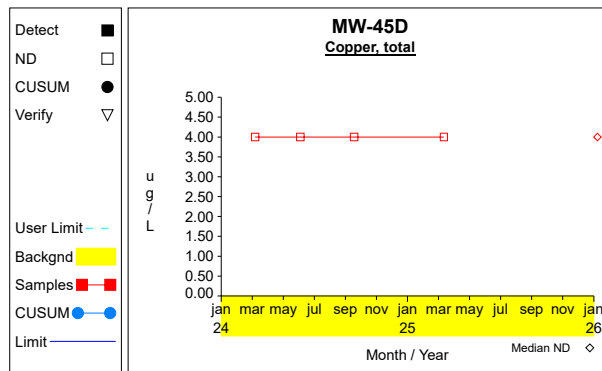
Graph 65



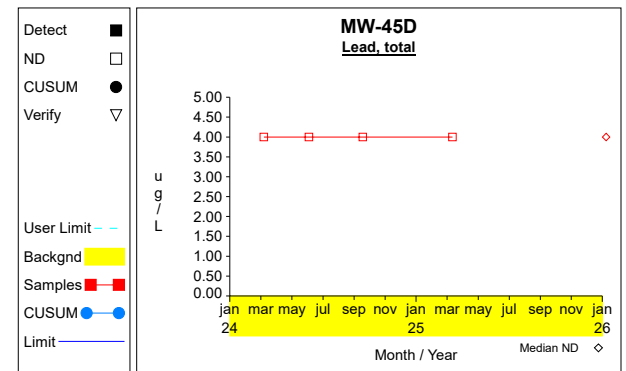
Graph 66



Graph 67

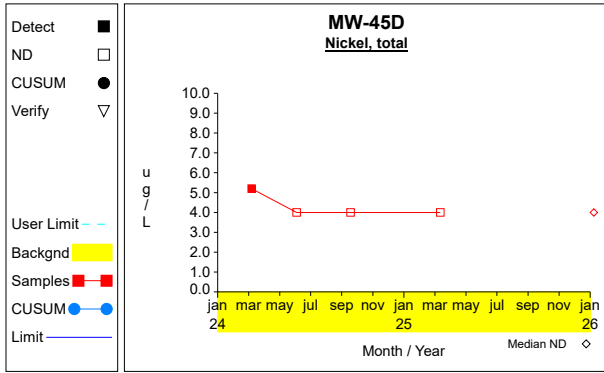


Graph 68

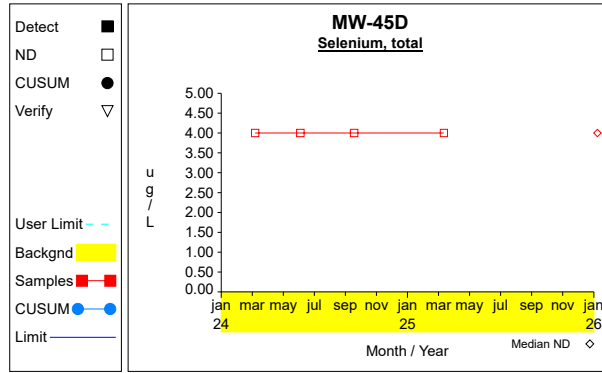


Graph 69

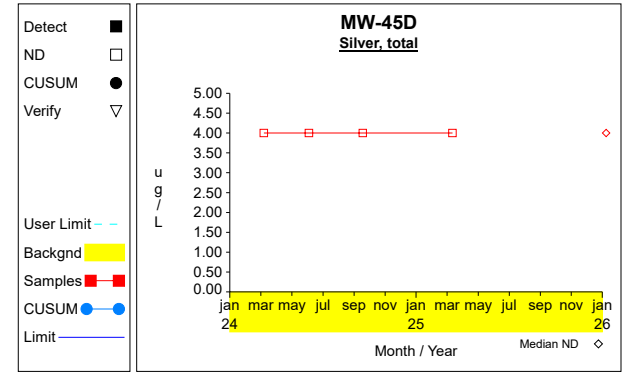
Intra-Well Control Charts / Prediction Limits



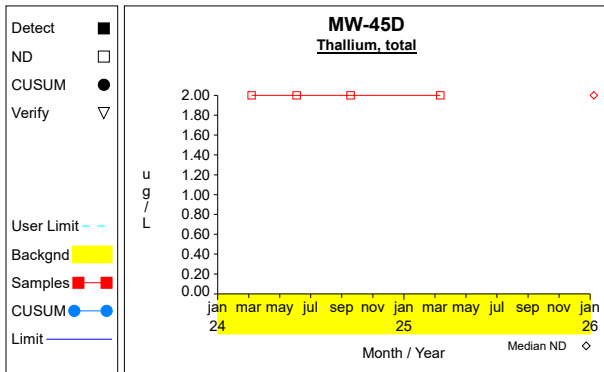
Graph 70



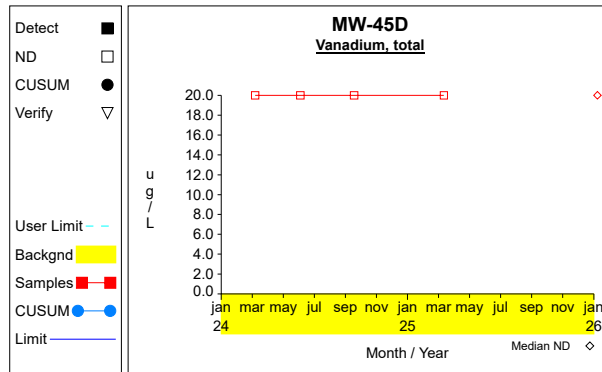
Graph 71



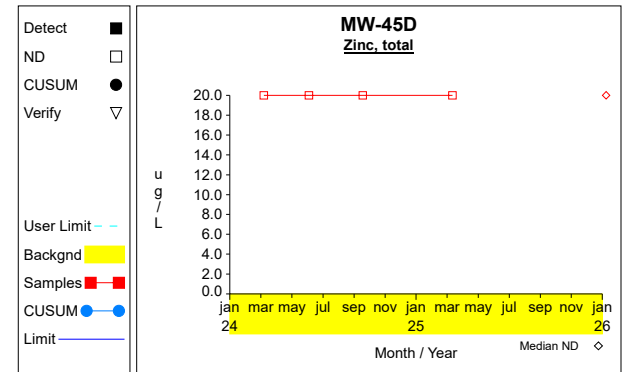
Graph 72



Graph 73



Graph 74

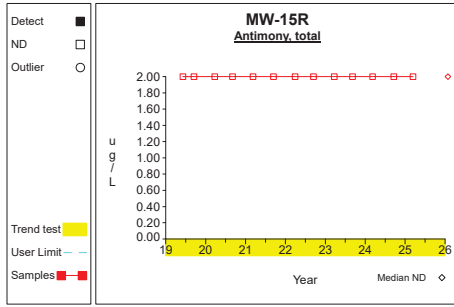


Graph 75

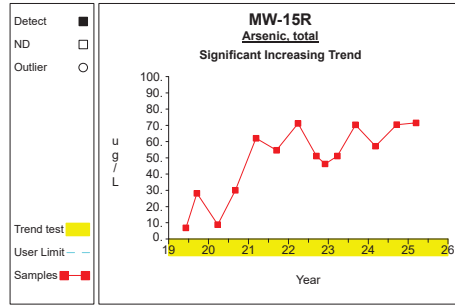
Attachment B

Time Series Graphs – Supplemental Wells MW-8B, MW-9AR, MW-15R

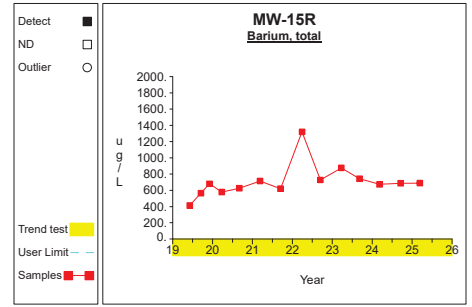
Time Series



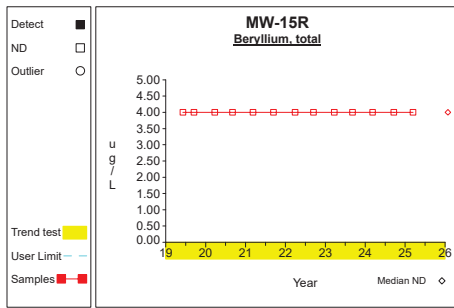
Graph 1



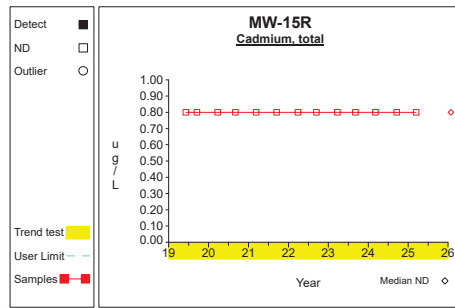
Graph 2



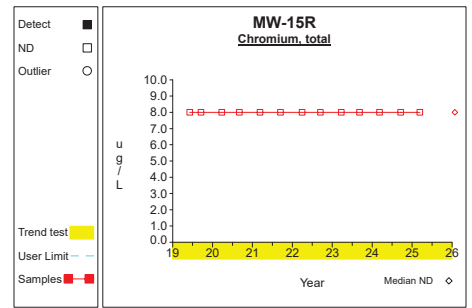
Graph 3



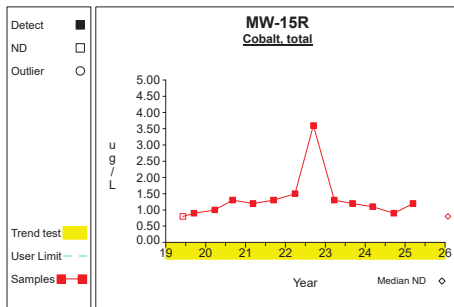
Graph 4



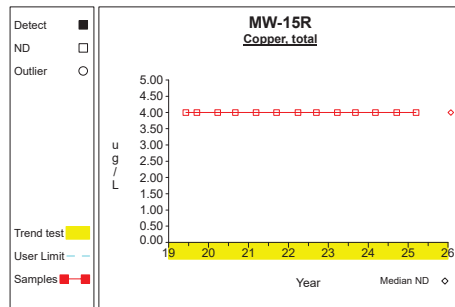
Graph 5



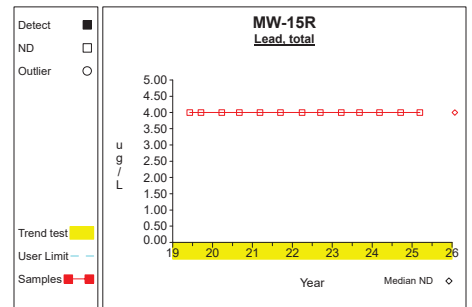
Graph 6



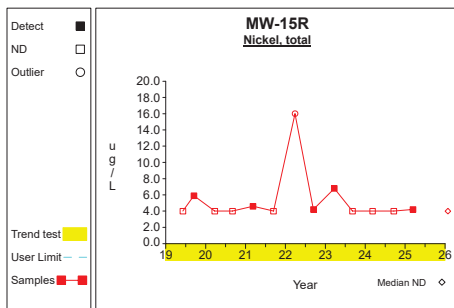
Graph 7



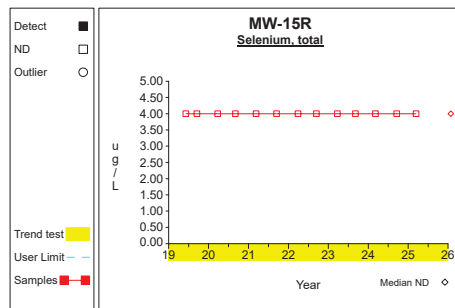
Graph 8



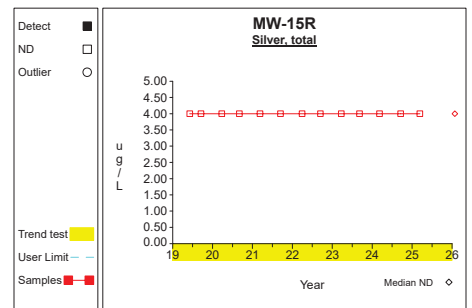
Graph 9



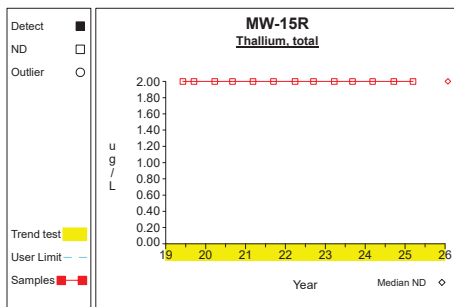
Graph 10



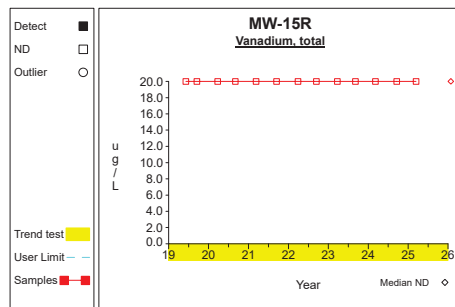
Graph 11



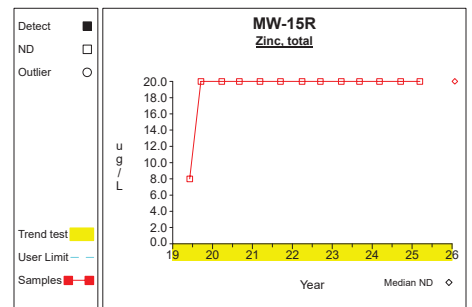
Graph 12



Graph 13

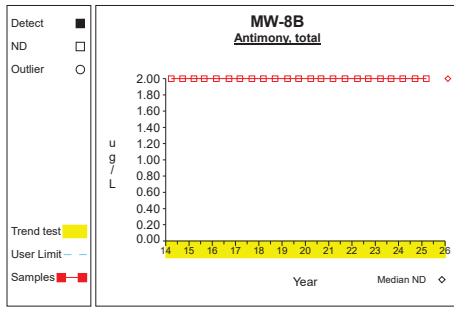


Graph 14

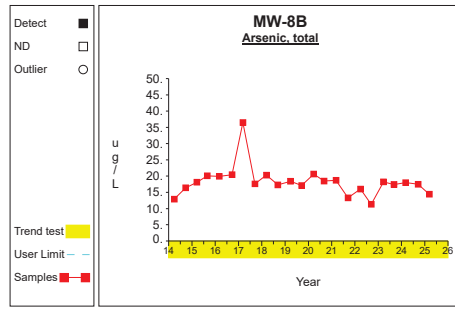


Graph 15

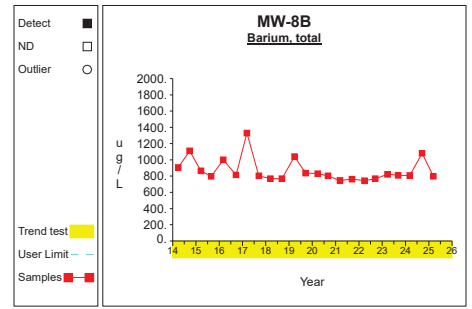
Time Series



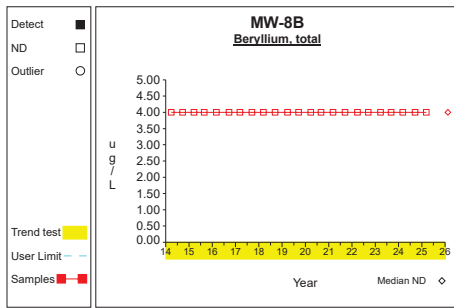
Graph 16



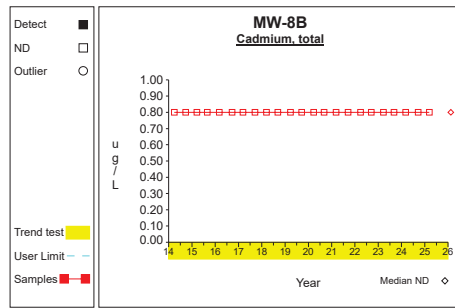
Graph 17



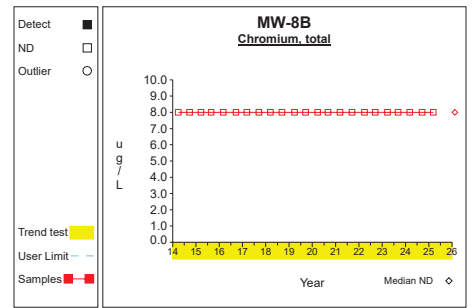
Graph 18



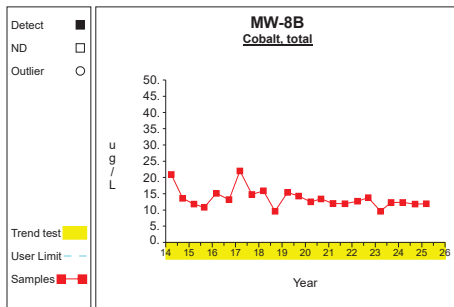
Graph 19



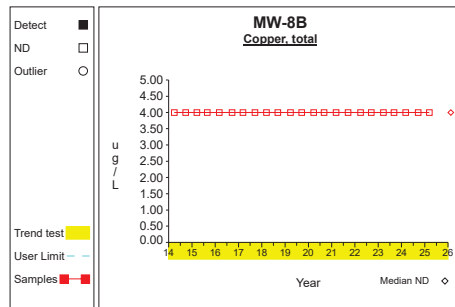
Graph 20



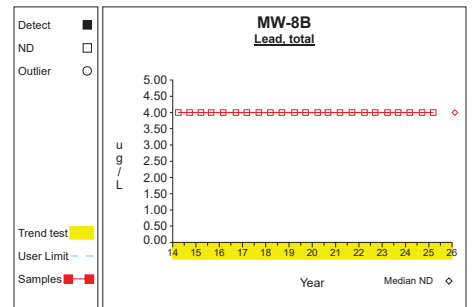
Graph 21



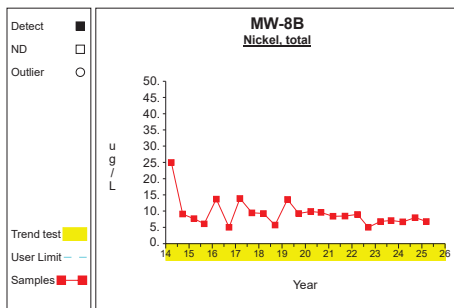
Graph 22



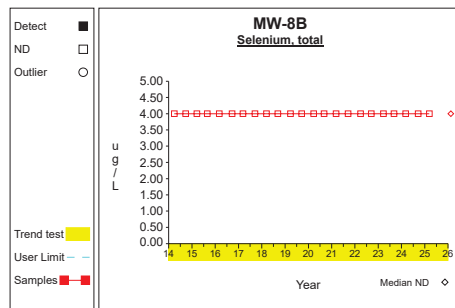
Graph 23



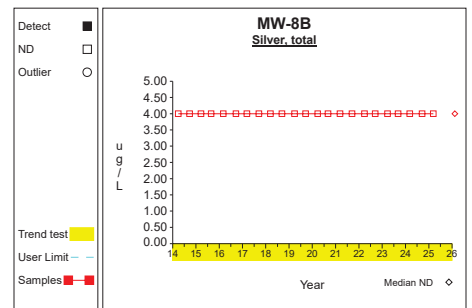
Graph 24



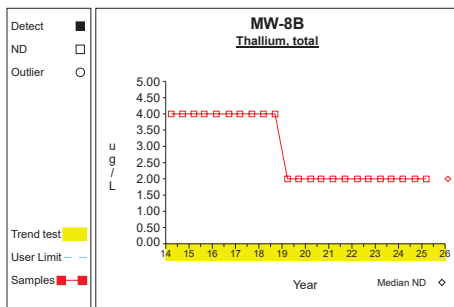
Graph 25



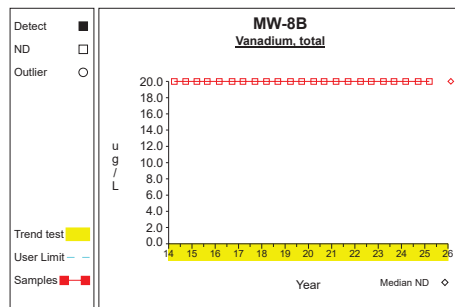
Graph 26



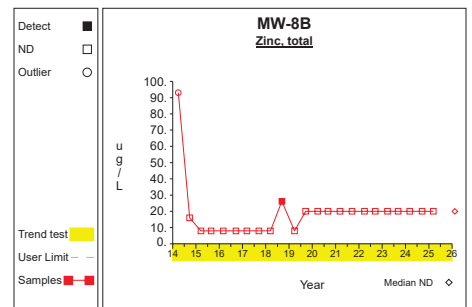
Graph 27



Graph 28

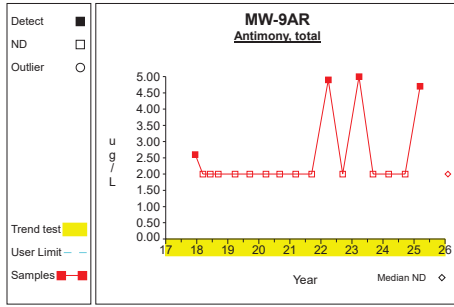


Graph 29

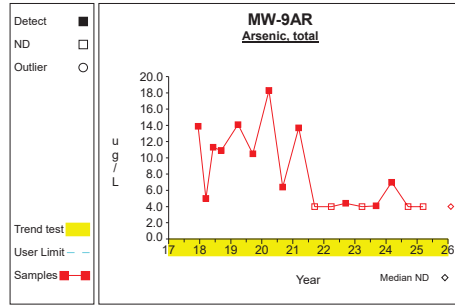


Graph 30

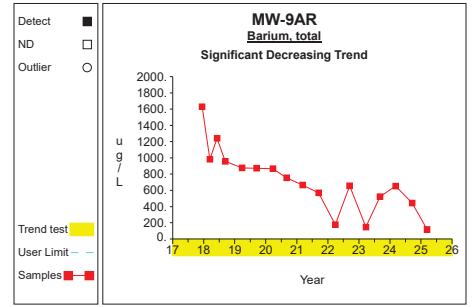
Time Series



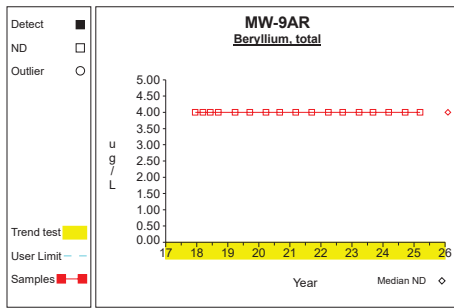
Graph 31



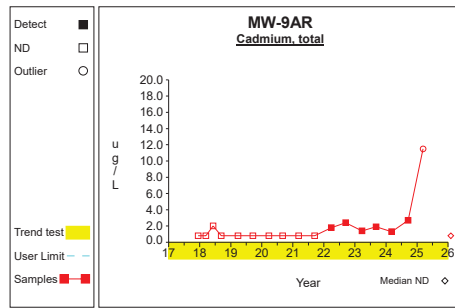
Graph 32



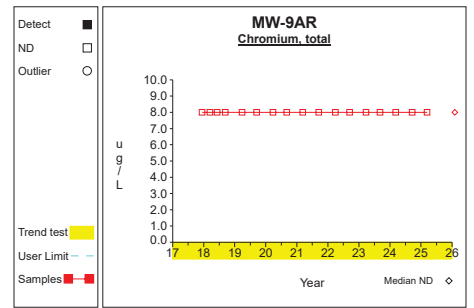
Graph 33



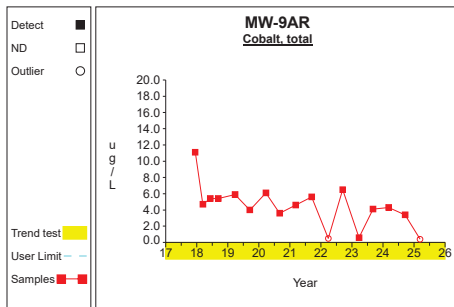
Graph 34



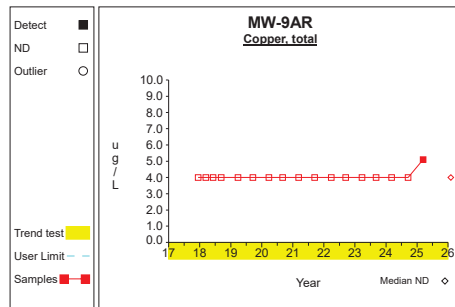
Graph 35



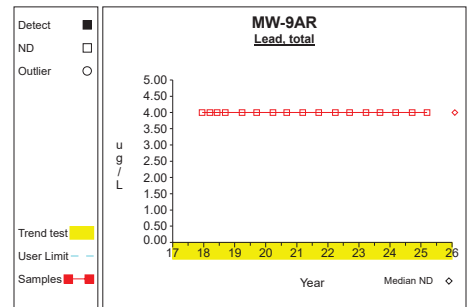
Graph 36



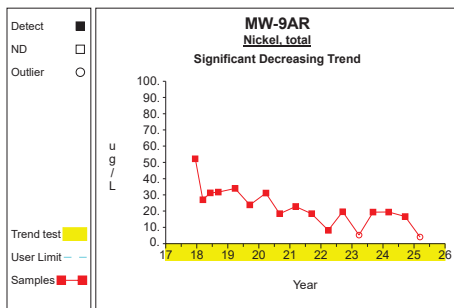
Graph 37



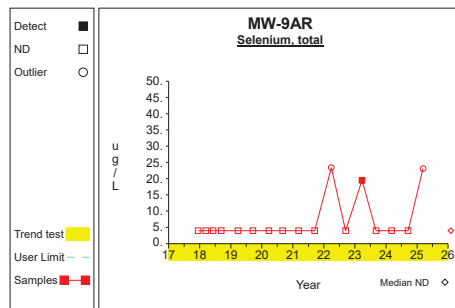
Graph 38



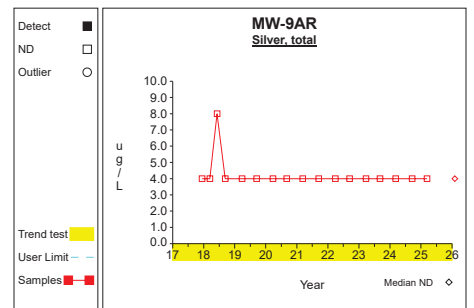
Graph 39



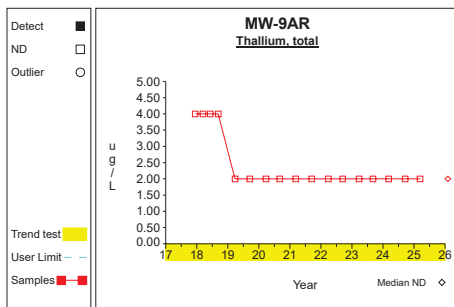
Graph 40



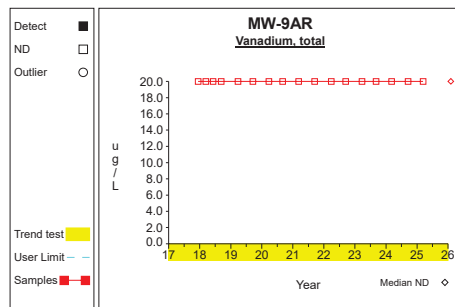
Graph 41



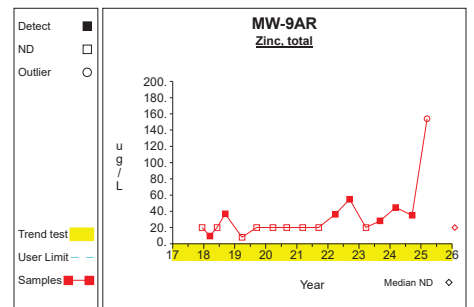
Graph 42



Graph 43



Graph 44



Graph 45