



June 19, 2019

Mr. Leo Hellested, P.E.
Office of Waste Management
Solid Waste Section
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908-5767

Attn: Mr. Robert Schmidt

Re: **Quarterly Monitoring Report**
1st Quarter (March) 2019, Groundwater Monitoring, Sampling, and Analysis
Tiverton Municipal Sanitary Landfill
Pare Project No.: 94139.24

Dear Mr. Hellested:

Enclosed herewith are results of the statistical analysis of groundwater monitoring data for the first quarterly monitoring round of Year 2019 from the Tiverton Landfill (Landfill). Pare Corporation (Pare) has prepared this report on behalf of the Town of Tiverton (Town). Pare conducted the groundwater sampling on March 28, 2019 at the background well OW-9 and compliance wells OW-7, OW-12, OW-13, OW-14, OW-15, and OW-16.

Groundwater samples were analyzed by New England Testing Laboratory (NETLAB) of West Warwick, Rhode Island for the constituents listed in Appendix A (Detection Monitoring) of the State Solid Waste Regulations. Certified laboratory results data are enclosed and are summarized on attached Tables 1-3.

Groundwater field parameters consisting of temperature, pH, and specific conductivity were measured at each monitoring well, in accordance with the RIDEM-approved Groundwater Monitoring Plan for the Landfill. Field parameters were collected until three successive measurements stabilized within $\pm 3\%$ for temperature, ± 0.1 standard unit for pH, and $\pm 3\%$ for specific conductivity, in accordance with US EPA's Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. Field parameters are documented on Field Sampling Data Sheets, which are enclosed.

Combustible gases are monitored at each well and at the top of the Landfill. Each of the well locations with the exception of OW-15 had no detections of combustible gas observed during this monitoring round. OW-15 had a methane reading of 44% LEL. Combustible gases have not been detected at the Landfill in past quarterly monitoring rounds – this is the first round in which a detectable level of combustible gas have been detected at any groundwater monitoring wells. OW-15 is over 300 feet from the nearest property line and given that no other wells had combustible gases at detectable levels, it does not appear that this occurrence of combustible gases warrants immediate action. Pare will continue to monitor for combustible gases at OW-15, and the other monitoring wells to evaluate if this occurrence is the beginning of an increasing trend in gas at the landfill or a sampling anomaly.

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HUMAN HEALTH THRESHOLD EVALUATION

Background Well OW-9 – Eleven (11) target metals were reported in the groundwater sample collected from OW-9. No (0) target metals were reported above their corresponding MCLs or human health thresholds at OW-9. No (0) target VOCs were reported above laboratory detection limits at OW-9.

Compliance Well OW-7 – Eleven (11) target metals were reported in the groundwater sample collected from OW-7. No (0) target metals were reported above their corresponding MCLs or human health thresholds at OW-7. One (1) target VOC, MTBE, was reported above laboratory detection limits. No (0) target VOCs were reported above their corresponding MCLs or human health thresholds at OW-7.

Compliance Well OW-12 – Five (5) target metals were reported in the groundwater sample collected from OW-12. No (0) target metals were reported above their corresponding MCLs or human health thresholds at OW-12. No (0) target VOCs were reported above laboratory detection limits at OW-12.

Compliance Well OW-13 – Nine (9) target metals were reported in the groundwater sample collected from OW-13. No (0) target metals were reported above their corresponding MCLs or human health thresholds at OW-13. Two (2) target VOCs; chlorobenzene and MTBE; were reported above their laboratory detection limits. No (0) target VOCs were reported above their corresponding MCLs or human health thresholds at OW-13.

Compliance Well OW-14 – Ten (10) target metals were reported in the groundwater sample collected from OW-14. No (0) target metals were reported above their corresponding MCLs or human health thresholds at OW-14. Four (4) target VOCs, MTBE, benzene, chlorobenzene, and 1,4-dichlorobenzene, were reported above laboratory detection limits. No (0) target VOCs were reported above their corresponding MCLs or human health thresholds at OW-14.

Compliance Well OW-15 – Nine (9) target metals were reported in the groundwater sample collected from OW-15. One (1) reported metal; arsenic (0.0352 mg/L); exceeded its MCL (0.01 mg/L). Four (4) target VOCs; MTBE, benzene, chlorobenzene, and 1,4-dichlorobenzene were reported above their laboratory detection limits. No (0) target VOCs were reported above their corresponding MCLs or human health thresholds at OW-15.

Compliance Well OW-16 – Seven (7) target metals were reported in the groundwater sample collected from OW-16. No (0) target metals were reported above their corresponding MCLs or human health thresholds at OW-16. One (1) target VOC, MTBE, was reported above laboratory detection limits. No (0) target VOCs were reported above their corresponding MCLs or human health thresholds at OW-16.



TOLERANCE INTERVAL STATISTICAL EVALUATION

The Tolerance Interval (TI) approach was used to develop Tolerance Limits (TLs) for each target inorganic constituent (i.e., metals) using the background well analytical results from the eight preceding rounds for which analytical results are available. The background well, OW-9, could not be sampled in several previous monitoring rounds including in the June 2016, September 2016, June 2017, September 2017, and September 2018 monitoring rounds due to dry conditions. Therefore, analytical results of the eight most recent rounds in which samples could be collected were utilized to generate the TLs for this monitoring round, dating back to December 2015. The TI approach is considered inappropriate for analysis of organic constituents and was therefore not performed to evaluate the results of reported VOCs. Table 2 summarizes historical results data from OW-9 used in the calculation of the TLs.

Four (4) metals; arsenic, barium, cobalt, and selenium; had reported concentrations that exceeded their corresponding TLs calculated during the March 2019 monitoring round in at least one compliance well. In total, there were eight (8) TL exceedances of these metals in this monitoring round. The TLs and the corresponding compliance well data from this monitoring round are presented in Table 3. Arsenic, barium, and cobalt are routinely detected in groundwater beneath the landfill.

CUSUM METHOD STATISTICAL EVALUATION

The Shewhart-CUSUM Method, a supplemental statistical analysis method used in addition to the TI Method, was performed in accordance with the US EPA documents titled "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Interim Final Guidance, April 1989" and "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Addendum to Interim Final Guidance, July, 1992".

Barium at OW-12 and OW-13 and copper at OW-13 exceeded both of their respective Shewhart-CUSUM thresholds during the March 2019 monitoring round.

ASSESSMENT MONITORING

The Shewhart-CUSUM analysis is utilized, along with the Tolerance Limits, to identify when Assessment Monitoring should be performed.

Pare performed Assessment Monitoring at OW-13 in the June 2018 monitoring round due to an exceedance of both the TL and the Shewhart-CUSUM threshold of barium in the March 2018 monitoring round. No (0) Appendix B parameters were reported in samples collected from OW-13.

One (1) Appendix B parameter, sulfides, was reported above its respective detection limits in December 2017, as a result, Pare recommended that OW-14 be tested for sulfides in March 2018. Sulfides (0.04 mg/L) were detected in the samples collected from OW-14 in March 2018. Pare attempted to sample OW-14 in the September 2018 monitoring round to test for sulfides; however, a sample was unobtainable due to dry conditions. Pare sampled OW-14 for sulfides in December 2018. Sulfides were not detected in the samples collected at OW-14 during the December 2018 monitoring round.



Pare sampled OW-14 for sulfides in the March 2019 monitoring round. Sulfides were not detected in the samples collected at OW-14 during this monitoring round.

SURFACE WATER MONITORING

Per the request of the RIDEM in a letter dated January 31, 2019, the Town began incorporating surface water monitoring at surface water locations SW-1, SW-2, and SW-3 into the existing regular quarterly monitoring program. The parameters for surface water monitoring include: Appendix A metals, mercury, tin, iron, ammonia, TKN, total nitrogen, total phosphorus, and hardness. Additionally, field screening was performed at each surface water location to determine temperature, pH, and specific conductivity.

Monitoring Location SW-1 – Eight (8) target metals were detected in the surface water sample collected at SW-1. No (0) metals were detected above their respective aquatic life thresholds. Two (2) parameters, iron (0.521 mg/L) and total phosphorous (0.05 mg/L), exceeded their human health threshold (0.3 mg/L and 0.05 mg/L, respectively) but did not exceed their aquatic life thresholds. Additionally, ammonia, total nitrogen, and TKN were detected in the samples collected at SW-1; however, they did not exceed their given threshold values, or no threshold values have been established for these parameters.

Monitoring Location SW-2 – Nine (9) target metals were detected in the surface water sample collected at SW-2. No (0) metals were detected above their respective aquatic life thresholds. One (1) parameter, iron (0.516 mg/L), exceeded its human health threshold (0.3 mg/L) but did not exceed its aquatic life threshold. Additionally, total nitrogen and TKN were detected in the samples collected at SW-2; however, no threshold values have been established for these parameters.

Monitoring Location SW-3 – Eight (8) target metals were detected in the surface water sample collected at SW-3. One (1) metal, lead (0.0009 mg/L), was detected above its chronic aquatic life threshold (0.0005 mg/L). One parameter, iron (0.449 mg/L), exceeded its human health threshold (0.3 mg/L) but did not exceed its aquatic life threshold. Additionally, total nitrogen and TKN were detected in the samples collected at SW-3; however, no threshold values have been provided for these parameters.

MTBE ANALYSIS

Many of the most recent Assessment Monitoring rounds have been conducted due to MTBE concentrations in groundwater. Reported MTBE concentrations have generally risen since September 2006, as depicted in the attached figure titled Reported Concentrations of MTBE. The figure compares the recent increases in reported MTBE concentrations at OW-13, OW-14 and OW-15 to historical concentrations and drinking water advisories defined in the US EPA document titled “2011 Edition of the Drinking Water Standards and Health Advisories”.

Although reported MTBE concentrations appear to be trending slowly upward, MTBE has never been reported above its odor threshold (0.020 mg/L) or its taste threshold (0.040 mg/L). The US EPA has not established a human health advisory concentration for MTBE.

Because the elevated concentrations of MTBE have recently triggered Assessment Monitoring at OW-13, OW-14, and OW-15, and that no Appendix B parameters were reported to a significant degree at these wells, it is Pare’s opinion that the increasing trend in MTBE concentrations beneath the Landfill is an isolated phenomenon and not the result of a significant change in groundwater quality beneath the Landfill.



Despite CUSUM values of MTBE at OW-13, OW-14, and OW-15 remaining above their threshold during the September 2017 monitoring round, Pare does not recommend assessment monitoring due to the aforementioned MTBE trend. The lack of Appendix B parameters in the past, in conjunction with the lack of Appendix B parameters at OW-13 and OW-15 during the December 2016 monitoring round, and the lack of Appendix B parameters at OW-14 during the June 2016 monitoring round, suggests that the presence of MTBE trend does not indicate an increased likelihood that Appendix B parameters would be present beneath the Landfill.

CONCLUSIONS AND RECOMMENDATIONS

Currently, the Landfill conducts Detection Monitoring for the parameters listed in Appendix A of the State Solid Waste Regulations, as well as mercury and tin. During this monitoring round, four (4) metals; arsenic, barium, cobalt and selenium; exceeded their tolerance limits (TLs) in at least one well. Arsenic exceeded its TL during the previous monitoring round at OW-13 and OW-15. Barium exceeded its TL during the previous monitoring round at OW-13, OW-14, and OW-15. Cobalt exceeded its TL during the previous monitoring round at OW-7, OW-13, OW-14, and OW-15. Exceedances in two consecutive monitoring rounds is one of the criteria used to consider performing Assessment Monitoring in subsequent monitoring rounds.

The only parameter that might trigger Assessment Monitoring is barium at OW-3, which had two previous TL exceedances and a Shewhart-CUSUM exceedance this round. Barium is consistently detected in all the groundwater monitoring wells on-site at concentrations consistent with the recent detection at OW-13. As such, it does not, in Pare's opinion, appear as though this recent detection is a significant change in groundwater quality beneath the landfill, and therefore, Pare does not recommend Assessment Monitoring in June 2019.

Since the 2016 monitoring periods, a rising trend in detections of antimony at the compliance wells became apparent. Antimony was detected at the background well above its MCL during the December 2017 monitoring round. Antimony was detected at the background well again during the March 2019 monitoring round but below its MCL. Previously, antimony had not been detected at the background well since the September 2011 monitoring round. The detection of antimony at compliance well OW-14 in the June 2017 monitoring round triggered Assessment Monitoring, which was performed in the December 2017 monitoring round. The Assessment Monitoring resulted in detection of one Appendix B parameter, sulfides (0.04 mg/L). However, antimony was not detected at any groundwater well during the December 2017 monitoring period. Analysis of the samples collected from OW-14 during the March 2018 monitoring round indicated another detection of sulfides (0.04 mg/L). Assessment Monitoring was not performed at OW-14 in June but was performed at OW-13. Sulfides were not detected in the Assessment Monitoring performed at OW-13 during the June 2018 monitoring round. OW-14 was attempted to be sampled again for sulfides in the September 2018 monitoring round; however, a sample was unable to be collected due to dry conditions. OW-14 was sampled again in the December 2018 and March 2019 monitoring rounds, but sulfides were not detected in either round.

The EPA has no MCL for sulfides in groundwater. Water with dissolved hydrogen sulfide will smell musty or swampy around 0.5-1.0 mg/L and Pare did not identify a noticeable smell emanating from the groundwater sample in either round during which the constituent was detected. Hydrogen sulfide gas can occur naturally in groundwater from plant materials rotting underground in anaerobic conditions. Hydrogen sulfide gas could also be resulting from gypsum buried at the Landfill. Sulfides have not been detected at OW-14 for the past



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two (2) monitoring rounds that the well has been sampled. Therefore, Pare recommends that sulfide monitoring be discontinued at OW-14 for the June 2019 monitoring round.

Pare recommended that wells OW-7 and OW-16 be incorporated into the compliance monitoring regimen in the 2017 Annual Groundwater Monitoring Report. Despite OW-7 having several years of sampling data, the sampling rounds were selected on a rotating basis with wells OW-6 and OW-8 for alternate monitoring. Pare recommends that wells OW-7 and OW-16 be sampled for two years, or eight consecutive monitoring rounds, prior to initiating statistical analysis. The March 2019 monitoring period marks the fifth monitoring round that these wells are to be sampled consistently; therefore, it is estimated that statistical analysis for the bedrock and overburden wells will begin in the March 2020 monitoring round.

Should the RIDEM have any questions regarding this letter or the attached data, please feel free to contact the undersigned at (401) 334-4100, thank you.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Timothy P. Thies'.

Timothy P. Thies, P.E.
Senior Vice President

TPT/TCJ/abv

Attachments

cc: Richard Rogers, Tiverton Public Works Director (w/encl.)
Jay Lambert, Tiverton Landfill Subcommittee (w/encl.)
Jan Reitsma, Tiverton Town Administrator (w/encl.)
Travis C. Johnson, Pare Corporation (w/o encl.)

ATTACHMENT NO. 1
LABORATORY ANALYTICAL DATA REPORT



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 9C29050
Client Project: 94139 - Tiverton Landfill

Report Date: 08-April-2019

Prepared for:

Travis Johnson
Pare Corporation
8 Blackstone Valley Place
Lincoln, RI 02865

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted:

The samples listed below were submitted to New England Testing Laboratory on 03/29/19. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 9C29050. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
9C29050-01	OW-9	Water	03/28/2019	03/29/2019
9C29050-02	OW-12	Water	03/28/2019	03/29/2019
9C29050-03	OW-7	Water	03/28/2019	03/29/2019
9C29050-04	OW-16	Water	03/28/2019	03/29/2019
9C29050-05	OW-14	Water	03/28/2019	03/29/2019
9C29050-06	OW-15	Water	03/28/2019	03/29/2019
9C29050-07	OW-13	Water	03/28/2019	03/29/2019
9C29050-08	SW-1	Water	03/28/2019	03/29/2019
9C29050-09	SW-2	Water	03/28/2019	03/29/2019
9C29050-10	SW-3	Water	03/28/2019	03/29/2019

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

OW-12 (Lab Number: 9C29050-02)

<u>Analysis</u>	<u>Method</u>
Antimony	EPA 200.8
Arsenic	EPA 200.8
Barium	EPA 200.8
Beryllium	EPA 200.8
Cadmium	EPA 200.8
Chromium	EPA 200.8
Cobalt	EPA 200.8
Copper	EPA 200.8
Lead	EPA 200.8
Mercury	EPA 200.8
Nickel	EPA 200.8
Selenium	EPA 200.8
Silver	EPA 200.8
Thallium	EPA 200.8
Tin	EPA 200.8
Vanadium	EPA 200.8
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 200.8

OW-13 (Lab Number: 9C29050-07)

<u>Analysis</u>	<u>Method</u>
Antimony	EPA 200.8
Arsenic	EPA 200.8
Barium	EPA 200.8
Beryllium	EPA 200.8
Cadmium	EPA 200.8
Chromium	EPA 200.8
Cobalt	EPA 200.8
Copper	EPA 200.8
Lead	EPA 200.8
Mercury	EPA 200.8
Nickel	EPA 200.8
Selenium	EPA 200.8
Silver	EPA 200.8
Thallium	EPA 200.8
Tin	EPA 200.8
Vanadium	EPA 200.8
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 200.8

OW-14 (Lab Number: 9C29050-05)

<u>Analysis</u>	<u>Method</u>
Antimony	EPA 200.8
Arsenic	EPA 200.8
Barium	EPA 200.8
Beryllium	EPA 200.8

Request for Analysis (continued)

OW-14 (Lab Number: 9C29050-05) (continued)

Analysis

Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Sulfide
Thallium
Tin
Vanadium
Volatile Organic Compounds
Zinc

Method

EPA 200.8
SM4500-S-D
EPA 200.8
EPA 200.8
EPA 200.8
EPA 8260C
EPA 200.8

OW-15 (Lab Number: 9C29050-06)

Analysis

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Volatile Organic Compounds
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8

Request for Analysis (continued)

OW-16 (Lab Number: 9C29050-04)

Analysis

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Volatile Organic Compounds
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8

OW-7 (Lab Number: 9C29050-03)

Analysis

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Volatile Organic Compounds
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8

Request for Analysis (continued)

OW-9 (Lab Number: 9C29050-01)

Analysis

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Volatile Organic Compounds
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8

SW-1 (Lab Number: 9C29050-08)

Analysis

Ammonia
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Mercury
Nickel
Nitrate and Nitrite as N
Selenium
Silver
Thallium
Tin
Total Kjeldahl Nitrogen
Total Nitrogen
Total Phosphorous
Vanadium
Zinc

Method

SM4500-NH3-D
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM3120-B
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM3120-B
EPA 200.8
EPA 200.8
4500-N03-E
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM4500NH3-D
Calculation
SM4500-P-E
EPA 200.8
EPA 200.8

Request for Analysis (continued)

SW-2 (Lab Number: 9C29050-09)

Analysis

Ammonia
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Mercury
Nickel
Nitrate and Nitrite as N
Selenium
Silver
Thallium
Tin
Total Kjeldahl Nitrogen
Total Nitrogen
Total Phosphorous
Vanadium
Zinc

Method

SM4500-NH3-D
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM3120-B
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM3120-B
EPA 200.8
EPA 200.8
EPA 200.8
4500-N03-E
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM4500NH3-D
Calculation
SM4500-P-E
EPA 200.8
EPA 200.8

SW-3 (Lab Number: 9C29050-10)

Analysis

Ammonia
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Mercury
Nickel
Nitrate and Nitrite as N
Selenium
Silver
Thallium
Tin
Total Kjeldahl Nitrogen
Total Nitrogen
Total Phosphorous
Vanadium
Zinc

Method

SM4500-NH3-D
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM3120-B
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM3120-B
EPA 200.8
EPA 200.8
EPA 200.8
4500-N03-E
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
SM4500NH3-D
Calculation
SM4500-P-E
EPA 200.8
EPA 200.8

Method References

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Soil Survey Laboratory Methods Manual, USDA/NCRS, 2014

Case Narrative

CASE NARRATIVE:

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria. Those compounds in italics were qualitatively screened via reconstructed ion chromatography and no detections were identified to the listed PQLs.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Sample: OW-14

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
18496-25-8	Sulfide	376.2	ND	0.01

ND = Not Detected

Sample: SW-1

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7664-41-7	Ammonia	SM4500-NH3-D	0.2	0.1
	TKN	SM-4500-NH3-D	0.4	0.1
	Total Phosphorus	SM-4500-P-E	0.05	0.02
7727-37-9	Total Nitrogen	Calculation	1.50	0.100

ND = Not Detected

Sample: SW-2

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7664-41-7	Ammonia	SM4500-NH3-D	ND	0.1
	TKN	SM-4500-NH3-D	0.5	0.1
	Total Phosphorus	SM-4500-P-E	ND	0.02
7727-37-9	Total Nitrogen	Calculation	0.500	0.100

ND = Not Detected

Sample: SW-3

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7664-41-7	Ammonia	SM4500-NH3-D	ND	0.1
	TKN	SM-4500-NH3-D	0.3	0.1
	Total Phosphorus	SM-4500-P-E	ND	0.02
7727-37-9	Total Nitrogen	Calculation	0.300	0.100

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	0.0001	0.0001
7440-38-2	Arsenic	6010C	0.0001	0.0001
7440-39-3	Barium	6010C	0.006	0.001
7440-41-7	Beryllium	6010C	0.0003	0.0001
7440-43-9	Cadmium	6010C	0.0001	0.0001
7440-47-3	Chromium	6010C	0.0019	0.0001
7440-48-4	Cobalt	6010C	0.0003	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.001	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	0.0005	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	ND	0.0005
7440-66-6	Zinc	6010C	0.003	0.001
7439-92-1	Lead	6010C	0.0007	0.0001

ND = Not Detected

Sample: OW-12

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	ND	0.0001
7440-39-3	Barium	6010C	0.020	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	0.0004	0.0001
7440-47-3	Chromium	6010C	ND	0.0001
7440-48-4	Cobalt	6010C	0.0005	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.010	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	0.003	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	ND	0.0005
7440-66-6	Zinc	6010C	ND	0.001
7439-92-1	Lead	6010C	ND	0.0001

ND = Not Detected

Sample: OW-7

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	0.0002	0.0001
7440-39-3	Barium	6010C	0.034	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	0.0007	0.0001
7440-47-3	Chromium	6010C	0.0011	0.0001
7440-48-4	Cobalt	6010C	0.0090	0.0001
7440-50-8	Copper	6010C	0.002	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.011	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	0.0002	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	0.0013	0.0005
7440-66-6	Zinc	6010C	0.006	0.001
7439-92-1	Lead	6010C	0.0013	0.0001

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	ND	0.0001
7440-39-3	Barium	6010C	0.014	0.001
7440-41-7	Beryllium	6010C	0.0001	0.0001
7440-43-9	Cadmium	6010C	0.0003	0.0001
7440-47-3	Chromium	6010C	ND	0.0001
7440-48-4	Cobalt	6010C	0.0008	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.002	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	0.0001	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	ND	0.0005
7440-66-6	Zinc	6010C	0.004	0.001
7439-92-1	Lead	6010C	ND	0.0001

ND = Not Detected

Sample: OW-14

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	0.0001	0.0001
7440-38-2	Arsenic	6010C	0.0018	0.0001
7440-39-3	Barium	6010C	0.202	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	ND	0.0001
7440-47-3	Chromium	6010C	0.0007	0.0001
7440-48-4	Cobalt	6010C	0.0059	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.011	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	0.0002	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	0.0007	0.0005
7440-66-6	Zinc	6010C	0.004	0.001
7439-92-1	Lead	6010C	0.0010	0.0001

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	0.0352	0.0001
7440-39-3	Barium	6010C	0.158	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	ND	0.0001
7440-47-3	Chromium	6010C	0.0007	0.0001
7440-48-4	Cobalt	6010C	0.0126	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.025	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	0.0001	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	0.0010	0.0005
7440-66-6	Zinc	6010C	0.003	0.001
7439-92-1	Lead	6010C	0.0003	0.0001

ND = Not Detected

Sample: OW-13

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	0.0081	0.0001
7440-39-3	Barium	6010C	0.118	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	0.0004	0.0001
7440-47-3	Chromium	6010C	0.0004	0.0001
7440-48-4	Cobalt	6010C	0.0112	0.0001
7440-50-8	Copper	6010C	0.004	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.011	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	ND	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	ND	0.0005
7440-66-6	Zinc	6010C	0.005	0.001
7439-92-1	Lead	6010C	0.0008	0.0001

ND = Not Detected

Sample: SW-1

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	0.0002	0.0001
7440-39-3	Barium	6010C	0.023	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	ND	0.0001
7440-47-3	Chromium	6010C	0.0002	0.0001
7440-48-4	Cobalt	6010C	0.0002	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-89-6	Iron	6010C	0.521	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.001	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	ND	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	ND	0.0005
7440-66-6	Zinc	6010C	0.002	0.001
7439-92-1	Lead	6010C	0.0003	0.0001

ND = Not Detected

Sample: SW-2

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	0.0003	0.0001
7440-39-3	Barium	6010C	0.006	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	ND	0.0001
7440-47-3	Chromium	6010C	0.0005	0.0001
7440-48-4	Cobalt	6010C	0.0002	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-89-6	Iron	6010C	0.516	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.001	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	ND	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	0.0006	0.0005
7440-66-6	Zinc	6010C	0.003	0.001
7439-92-1	Lead	6010C	0.0003	0.0001

ND = Not Detected

Sample: SW-3

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.0001
7440-38-2	Arsenic	6010C	0.0002	0.0001
7440-39-3	Barium	6010C	0.007	0.001
7440-41-7	Beryllium	6010C	ND	0.0001
7440-43-9	Cadmium	6010C	ND	0.0001
7440-47-3	Chromium	6010C	0.0003	0.0001
7440-48-4	Cobalt	6010C	0.0002	0.0001
7440-50-8	Copper	6010C	ND	0.001
7439-89-6	Iron	6010C	0.449	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.002	0.001
7782-49-2	Selenium	6010C	ND	0.005
7440-22-44	Silver	6010C	ND	0.0001
7440-28-0	Thallium	7010	ND	0.0001
7440-34-5	Tin	6010C	ND	0.005
7440-62-2	Vanadium	6010C	ND	0.0005
7440-66-6	Zinc	6010C	0.004	0.001
7439-92-1	Lead	6010C	0.0009	0.0001

ND = Not Detected

Sample: SW-1

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
(Total)	Hardness	6010C	112	0.125

ND = Not Detected

Sample: SW-2

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
(Total)	Hardness	6010C	20.6	0.125

ND = Not Detected

Sample: SW-3

Case Number: 9C29050

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
(Total)	Hardness	6010C	23.7	0.125

ND = Not Detected

Sample: OW-9
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	ND	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	ND	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-9
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	ND	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	107%	70-130
1,2-Dichloroethane d4	103%	70-130
4 BFB	99%	70-130

ND = Not Detected

Sample: OW-12
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	ND	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	ND	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-12
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	ND	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	104%	70-130
1,2-Dichloroethane d4	106%	70-130
4 BFB	95%	70-130

ND = Not Detected

Sample: OW-7
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	ND	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	ND	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-7
 Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	ND	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	4.0	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	122%	70-130
1,2-Dichloroethane d4	89%	70-130
4 BFB	101%	70-130

ND = Not Detected

Sample: OW-16
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	ND	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	ND	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-16
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	ND	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	4.67	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	105%	70-130
1,2-Dichloroethane d4	94%	70-130
4 BFB	100%	70-130

ND = Not Detected

Sample: OW-14
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	2.1	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	10.8	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-14
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	2.1	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	5.0	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	100%	70-130
1,2-Dichloroethane d4	99%	70-130
4 BFB	97%	70-130

ND = Not Detected

Sample: OW-15
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	1.5	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	13.2	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-15
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	2.1	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	7.5	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	108%	70-130
1,2-Dichloroethane d4	100%	70-130
4 BFB	103%	70-130

ND = Not Detected

Sample: OW-13
Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0
71-55-6	1,1,1-Trichloroethane	ND	1.0
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0
79-00-5	1,1,2-Trichloroethane	ND	1.0
75-34-3	1,1-Dichloroethane	ND	1.0
75-35-4	1,1-Dichloroethylene	ND	1.0
563-58-6	1,1-Dichloropropene	ND	1.0
96-18-4	1,2,3-Trichloropropane	ND	1.0
96-12-8	1,2-Dibromo-3-chloropropane(DBCP)	ND	1.0
106-93-4	1,2-Dibromoethane	ND	1.0
107-06-2	1,2-Dichloroethane	ND	1.0
78-87-5	1,2-Dichloropropane	ND	1.0
142-28-9	1,3-Dichloropropane	ND	1.0
594-20-7	2,2-Dichloropropane	ND	1.0
591-78-6	2-Hexanone (Methyl butyl ketone)	ND	5.0
108-10-1	4-Methyl-2-pentanone	ND	5.0
67-64-1	Acetone	ND	5.0
75-05-8	<i>Acetonitrile (Methyl cyanide)</i>	ND	5.0
107-02-8	Acrolein	ND	5.0
107-13-1	Acrylonitrile	ND	5.0
107-05-1	<i>Allyl chloride</i>	ND	5.0
71-43-2	Benzene	ND	1.0
74-97-5	Bromochloromethane	ND	1.0
75-27-4	Bromodichloromethane	ND	1.0
75-25-2	Bromoform (Tribromomethane)	ND	1.0
75-15-0	Carbon disulfide	ND	5.0
56-23-5	Carbon tetrachloride	ND	1.0
108-90-7	Chlorobenzene	5.9	1.0
75-00-3	Chloroethane (Ethyl chloride)	ND	1.0
67-66-3	Chloroform (Trichloromethane)	ND	1.0
126-99-8	<i>Chloroprene</i>	ND	5.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-01-5	cis-1,3-Dichloropropene	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	1.0
97-63-2	<i>Ethyl methacrylate</i>	ND	5.0
100-41-4	Ethylbenzene	ND	1.0
78-83-1	<i>Isobutyl alcohol</i>	ND	20.0
465-73-6	<i>Isodrin</i>	ND	5.0
541-73-1	m-Dichlorobenzene	ND	1.0
126-98-7	<i>Methacrylonitrile</i>	ND	10.0
74-83-9	Methyl bromide (Bromomethane)	ND	1.0

Sample: OW-13
 Method: 8260C

Case Number: 9C29050

CAS RN	Common Name	Result, ppb	PQL (ppb)
74-87-3	Methyl chloride (Chloromethane)	ND	1.0
78-93-3	Methyl ethyl ketone (MEK)	ND	5.0
74-88-4	<i>Methyl iodide (Iodomethane)</i>	ND	5.0
80-62-6	<i>Methyl methacrylate</i>	ND	10.0
74-95-3	Methylene bromide (Dibromomethane)	ND	1.0
75-09-2	Methylene chloride (Dichloromethane)	ND	1.0
95-50-1	o-Dichlorobenzene	ND	1.0
106-46-7	p-Dichlorobenzene	ND	1.0
107-12-0	<i>Propionitrile (Ethyl cyanide)</i>	ND	20.0
100-42-5	Styrene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
1634-04-4	tert-Butylmethylether	3.4	1.0
108-88-3	Toluene	ND	1.0
156-60-5	trans-1,2-Dichloroethylene	ND	1.0
10061-02-6	trans-1,3-Dichloropropene	ND	1.0
110-57-6	<i>trans-1,4-Dichloro-2-butene</i>	ND	5.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane (CFC-11)	ND	1.0
108-05-4	<i>Vinyl acetate</i>	ND	5.0
75-01-4	Vinyl chloride (Chloroethene)	ND	1.0
1330-20-7	Xylene (total)	ND	1.0

Surrogates:

Compound	% Recovery	Limits
Toluene d8	109%	70-130
1,2-Dichloroethane d4	102%	70-130
4 BFB	99%	70-130

ND = Not Detected

ATTACHMENT NO. 2
ANALYTICAL SUMMARY TABLES

**TABLE 1 (CONT.)
SUMMARY OF GROUNDWATER MONITORING RESULTS**

MONITORING WELL OW-7

Concentration (expressed in same units as MCL)

Parameter	Max. Cont. Level (MCL)	Concentration (expressed in same units as MCL)												
		DEC '01	SEP '01	SEP '99	SEP '98	JUN '98	SEP '97	SEP '96	MAR '96	SEP '95	JUN '95	DEC '94	SEP '94	
Antimony	0.006 mg/l	ND	ND	ND	ND	ND	ND	BDL	BDL	BDL	BDL	BDL	BDL	
Arsenic	0.05 mg/l	ND	ND	ND	0.017	0.015	ND	0.066	0.18	0.15	0.073	0.1	0.041	
Barium	2 mg/l	0.12	0.14	0.10	0.33	0.28	0.085	0.232	0.533	0.351	0.364	1.11	0.352	
Beryllium	0.004 mg/l	0.0020	ND	0.0028	0.0083	0.007	ND	0.0046	0.0149	0.0084	0.0077	0.03	0.007	
Cadmium	0.005 mg/l	0.091	0.26	0.0095	0.014	0.012	0.0087	0.067	0.068	0.052	0.025	0.04	0.007	
Chromium	0.1 mg/l	0.056	0.049	ND	0.25	0.25	ND	0.127	0.43	0.194	0.143	0.73	0.123	
Chromium	mg/l	0.060	0.058	0.022	0.11	0.12	ND	0.067	0.205	0.104	0.085	0.37	0.097	
Copper	1.3 mg/l	0.28	0.53	0.081	0.32	0.28	0.055	0.322	0.531	0.297	0.178	0.7	0.157	
Lead	0.015 mg/l	0.045	0.048	0.033	0.092	0.081	0.03	0.073	0.24	0.1	0.066	0.26	0.072	
Nickel	0.1 mg/l	0.11	0.13	0.046	0.33	0.16	0.042	0.172	0.476	0.242	0.17	0.72	0.13	
Selenium	0.05 mg/l	ND	ND	0.027	0.0028	ND	ND	BDL	BDL	BDL	BDL	BDL	BDL	
Silver	0.05 mg/l	ND	ND	ND	ND	ND	ND	BDL	BDL	BDL	0.001	BDL	BDL	
Thallium	0.002 mg/l	0.047	0.048	ND	ND	ND	ND	BDL	BDL	BDL	BDL	BDL	BDL	
Vanadium	mg/l	0.041	0.052	0.014	0.19	0.2	ND	0.118	0.367	0.179	0.135	0.58	0.106	
Zinc	5 mg/l	0.28	0.56	0.085	0.66	0.62	0.11	0.367	1.08	0.57	0.419	1.9	0.36	
Mercury	0.002 mg/l	ND	ND	ND	ND	ND	ND	BDL	BDL	BDL	BDL	NT	NT	
Acetone	ug/l	NT	NT	ND	NT	NT	NT							
Acrylonitrile	ug/l	NT	NT	ND	NT	NT	NT							
Benzene	5 ug/l	NT	NT	ND										
Bromochloromethane	ug/l	NT	NT	ND	NT	NT	NT							
Bromodichloromethane	ug/l	NT	NT	ND										
Bromoform	ug/l	NT	NT	ND										
Carbon disulfide	ug/l	NT	NT	ND	NT	NT	NT							
Bromomethane	ug/l	NT	NT	ND										
Carbon tetrachloride	0.005 ug/l	NT	NT	ND										
Chlorobenzene	ug/l	NT	NT	1.8	1.8	ND	1.8	ND	ND	ND	ND	ND	ND	
Chlorodibromomethane	ug/l	NT	NT	ND										
Chloroform	ug/l	NT	NT	ND										
Chloroethane	ug/l	NT	NT	1.9	ND	ND	2.0	2	5	ND	ND	ND	ND	
Chloromethane	ug/l	NT	NT	ND										
1,2-Dibromo-3-chloropropane	ug/l	NT	NT	ND	NT	NT	NT							
1,2-Dibromoethane	ug/l	NT	NT	ND	NT	NT	NT							
Dibromomethane	ug/l	NT	NT	ND	NT	NT	NT							
1,2-Dichlorobenzene	600 ug/l	NT	NT	ND										
1,4-Dichlorobenzene	75 ug/l	NT	NT	ND										
trans-1,4-Dichlo-2-butene	ug/l	NT	NT	ND	NT	NT	NT							
1,1-Dichloroethane	5 ug/l	NT	NT	ND										
1,2-Dichloroethane	5 ug/l	NT	NT	ND										
cis-1,2-Dichloroethylene	70 ug/l	NT	NT	ND										
Trans-1,2-Dichloroethylene	100 ug/l	NT	NT	ND										
1,1-Dichloroethylene(1,1-Dichloroethene)	7 ug/l	NT	NT	ND										
1,2-Dichloropropane	5 ug/l	NT	NT	ND										
cis-1,3-Dichloropropene	ug/l	NT	NT	ND										
trans-1,3-Dichloropropene	ug/l	NT	NT	ND										
Methylene chloride	ug/l	NT	NT	ND										
1,1,1,2-Tetrachloroethane	ug/l	NT	NT	ND	NT	NT	NT							
1,1,2,2-Tetrachloroethane	ug/l	NT	NT	ND										
Tetrachloroethylene(PCE)	5 ug/l	NT	NT	ND										
1,1,1-Trichloroethane	200 ug/l	NT	NT	ND										
1,1,2-Trichloroethane	5 ug/l	NT	NT	ND										
Trichloroethylene(TCE)	5 ug/l	NT	NT	ND										
Trichlorofluoromethane	ug/l	NT	NT	ND										
Vinyl chloride	2 ug/l	NT	NT	ND										
Ethylbenzene	700 ug/l	NT	NT	ND	2	ND								
Toluene	1000 ug/l	NT	NT	ND	3	2	2							
Xylenes	10000 ug/l	NT	NT	ND	1	23	ND							
Methyl butyl ketone(2-Hexanone)	ug/l	NT	NT	ND	NT	NT	NT							
Methyl tert-butyl ether (MTBE)	ug/l	NT	NT	3.0	ND	ND	ND	ND	ND	ND	NT	NT	NT	
Methyl ethyl ketone(2-Butanone)	ug/l	NT	NT	ND	NT	NT	NT							
Methyl iodide	ug/l	NT	NT	ND	NT	NT	NT							
4-Methyl-2-pentanone	ug/l	NT	NT	ND	NT	NT	NT							
Styrene	ug/l	NT	NT	ND	NT	NT	NT							
1,2,3-Trichloropropane	ug/l	NT	NT	ND	NT	NT	NT							
Vinyl acetate	ug/l	NT	NT	ND										

ND = NOT DETECTED
NT = PARAMETER NOT TESTED FOR

No samples were collected during the March, June & December 1996, March & December 1997, March & December 1998, March, June & December 1999, March, June, September & December 2000, and March & June 2001 sampling rounds.

TABLE 1
SUMMARY OF GROUNDWATER MONITORING RESULTS
APPENDIX A - CONSTITUENTS FOR DETECTION MONITORING
MONITORING WELL OW-12
Concentration (Expressed in same units as Threshold Value)

Parameter	Threshold Value	MAR-19	DEC-18	SEP-18	JUN-18	MAR-18	DEC-17	SEP-17	JUN-17	MAR-17	DEC-16	SEP-16	JUN-16	MAR-16	DEC-15	SEP-15	JUN-15	MAR-15	DEC-14	SEP-14	JUN-14	MAR-14	DEC-13	SEP-13	JUN-13	MAR-13	DEC-12	SEP-12	JUN-12	MAR-12	DEC-11	SEP-11	JUN-11	MAR-11	DEC-10	SEP-10				
Arsenite	0.050 mg/L	ND	ND	ND	0.001	ND	0.0200	ND	0.0010	0.0200	ND																													
Arsenic	0.010 mg/L	ND	ND	ND	0.01	ND	0.0500	ND	0.0060	0.0500	ND																													
Barium	2 mg/L	0.02	0.02	0.023	0.02	0.0170	0.0240	0.0260	0.0240	0.0410	0.0260	0.0670	0.0360	0.0200	0.0260	0.0250	0.0190	0.0600	0.0160	0.0210	0.0120	0.0140	0.0130	0.0150	0.0080	0.0130	0.0180	0.0170	0.0160	0.0160	0.0100	0.0280	0.0130	0.0113	0.0151	0.0156				
Beryllium	0.006 mg/L	ND																																						
Cadmium	0.005 mg/L	0.0004	ND	ND	ND	ND	ND	ND	0.0010	ND																														
Chromium	0.1 mg/L	ND	ND	0.002	ND	ND	ND	0.0030	0.0010	0.0040	ND	0.0180	0.0130	ND	0.0020	ND	ND	ND	ND	ND	0.0020	0.0020	0.0020	0.0010	0.0020	ND	0.0020	ND	ND	ND	ND	0.0010	ND	ND	ND	ND	ND	ND		
Cobalt	0.73 mg/L	0.0085	ND	0.002	ND	ND	0.0020	ND	0.0020	ND	0.0080	0.0080	ND																											
Copper	1.3 mg/L	ND	0.009	ND	0.0250	0.0150	ND	0.0330	ND	0.0010	ND	ND	0.0100	ND	0.0010	ND																								
Lead	0.015 mg/L	ND	0.0150	0.0120	ND	0.0200	ND	0.0020	0.0020	0.0030	0.0020	0.0020	0.0020	0.0020	0.0010	0.0010	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020										
Nickel	0.002 mg/L	ND	ND	NT	ND																																			
Nickel	0.1 mg/L	0.01	0.024	0.025	0.025	0.0170	0.0140	0.0090	0.0140	0.0070	0.0220	0.0130	0.0060	0.0080	0.0040	0.0060	0.0040	0.0096	0.0040	0.0040	0.0040	0.0040	0.0040	0.0050	0.0020	0.0040	0.0050	0.0040	0.0030	0.0050	0.0030	0.0070	0.0110	0.0034	0.0028	0.0037				
Selenium	0.05 mg/L	ND	0.0100	ND	ND	ND	ND	0.0060	ND	ND	0.0120	0.0110	0.0060	ND	0.0080	0.0090	ND	0.0020	ND	ND	ND																			
Silver	0.1 mg/L	0.039	ND																																					
Thallium	0.002 mg/L	ND																																						
Tin	22 mg/L	ND	ND	NT	ND	0.0980	0.1800	ND																																
Vanadium	0.26 mg/L	ND	ND	0.001	ND	ND	ND	0.0030	ND	0.0040	0.0200	0.0200	ND	0.0020	ND	ND	0.0020	ND	0.0030	ND																				
Zinc	2 mg/L	ND	0.007	0.026	0.009	0.0070	0.0060	0.0130	0.0100	0.0220	ND	0.0500	0.0420	ND	ND	0.0050	0.0070	ND	0.0080	0.0100	ND	0.0080	0.0070	0.0080	0.0160	ND	0.0170	0.0147												
Acetone	610 µg/L	ND																																						
Arylamines	5 µg/L	ND																																						
Benzene	5 µg/L	ND																																						
Bromochloromethane	80 µg/L	ND																																						
Bromodichloromethane (THM)	80 µg/L	ND																																						
Bromoforn	80 µg/L	ND																																						
Carbon disulfide	1000 µg/L	ND																																						
Carbon tetrachloride	5 µg/L	ND																																						
Chlorobenzene	100 µg/L	ND																																						
Chloroethane	4.6 µg/L	ND																																						
Chloroform	80 µg/L	ND																																						
Chlorodibromomethane (THM)	80 µg/L	ND																																						
1,2-Dibromo-3-chloroethane (DBCP)	0.2 µg/L	ND																																						
1,2-Dichloroethane (DCE)	0.05 mg/L	ND																																						
1,2-Dichlorobenzene	600 µg/L	ND																																						
1,4-Dichlorobenzene	75 µg/L	ND																																						
trans-1,4-Dichloro-2-butene	5 µg/L	ND																																						
1,1-Dichloroethane	5 µg/L	ND																																						
1,2-Dichloroethane	5 µg/L	ND																																						
1,1-Dichloroethylene	7 µg/L	ND																																						
cis-1,2-Dichloroethane	70 µg/L	ND	ND	ND</																																				

TABLE 1 (CONT.)
SUMMARY OF GROUNDWATER MONITORING RESULTS
APPENDIX A - CONSTITUENTS FOR DETECTION MONITORING
MONITORING WELL OW-16
 Concentration (Expressed in same units as Threshold Value)

Parameter	Threshold Value	MAR '19	DEC '18	SEP '18	JUN '18	MAR '18	NOV '17
Arsenite	0.050 mg/L	ND	ND	ND	0.002	ND	ND
Arsenic	0.010 mg/L	ND	ND	ND	0.01	ND	ND
Barium	2 mg/L	0.014	0.017	0.027	0.011	0.0190	0.1000
Beryllium	0.004 mg/L	0.0001	ND	ND	ND	ND	ND
Cadmium	0.005 mg/L	0.0003	ND	ND	ND	ND	ND
Chromium	0.1 mg/L	ND	0.003	0.003	0.004	0.0060	0.0050
Cobalt	0.75 mg/L	0.0088	0.008	0.004	0.002	0.0050	0.0050
Copper	1.3 mg/L	ND	ND	ND	ND	ND	ND
Lead	0.015 mg/L	ND	ND	ND	ND	ND	ND
Mercury	0.002 mg/L	ND	ND	NT	ND	ND	ND
Nickel	0.1 mg/L	0.002	0.013	0.01	0.009	0.0100	0.0100
Selenium	0.05 mg/L	ND	0.009	0.003	ND	0.0100	0.0050
Silver	0.1 mg/L ^{1,3}	0.0001	ND	ND	ND	ND	ND
Thallium	0.002 mg/L	ND	ND	ND	ND	0.0003	ND
Tin	22 mg/L	ND	ND	NT	ND	ND	ND
Vanadium	0.26 mg/L	ND	ND	ND	ND	ND	ND
Zinc	2 mg/L ^{1,3}	0.004	0.025	0.019	0.022	0.024	0.0210
Acetone	610 µg/L	ND	ND	ND	ND	ND	ND
Acrylonitrile	0.039 mg/L	ND	ND	ND	ND	ND	ND
Benzene	5 µg/L	ND	ND	ND	ND	ND	ND
Bromochloromethane	80 µg/L	ND	ND	ND	ND	ND	ND
Bromodichloromethane (THM)	80 µg/L	ND	ND	ND	ND	ND	ND
Bromofrom	80 µg/L	ND	ND	ND	ND	ND	ND
Carbon disulfide	1000 µg/L	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5 µg/L	ND	ND	ND	ND	ND	ND
Chlorobenzene	100 µg/L	ND	ND	ND	ND	ND	ND
Chloroethane	4.6 µg/L	ND	ND	ND	ND	ND	ND
Chloroform	80 µg/L	ND	ND	ND	ND	ND	ND
Chlorodibromomethane (THM)	80 µg/L	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroethane (DBCP)	0.2 µg/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (DCE)	0.05 mg/L	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600 µg/L	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75 µg/L	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5 µg/L	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5 µg/L	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	7 µg/L	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethane	70 µg/L	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethane	100 µg/L	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5 µg/L	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropane	µg/L	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropane	µg/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	700 µg/L	ND	ND	ND	ND	ND	ND
Methyl butyl ketone(2-Hexanone)	160 µg/L	ND	ND	ND	ND	ND	ND
Bromomethane	10 µg/L	ND	ND	ND	ND	ND	ND
Chloromethane	30 µg/L	ND	ND	ND	ND	ND	ND
Dibromomethane	61 µg/L	ND	ND	ND	ND	ND	ND
Methylene chloride	5 µg/L	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone(2-Butanone)	4000 µg/L	ND	ND	ND	ND	ND	ND
Methyl iodide	µg/L	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	µg/L	ND	ND	ND	ND	ND	ND
Styrene	100 µg/L	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	70 µg/L	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.3 µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene(PCE)	5 µg/L	ND	ND	ND	ND	ND	ND
Toluene	1000 µg/L	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200 µg/L	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5 µg/L	ND	ND	ND	ND	ND	ND
Trichloroethylene(TCE)	5 µg/L	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	2000 µg/L	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	40 µg/L	ND	ND	ND	ND	ND	ND
Vinyl acetate	410 µg/L	ND	ND	ND	ND	ND	ND
Vinyl chloride	2 µg/L	ND	ND	ND	ND	ND	ND
Xylenes	10000 µg/L	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE)	20-65 µg/L	4.67	3.77	3.42	6.53	7.8	4.6

ND = Exceeded MCL.

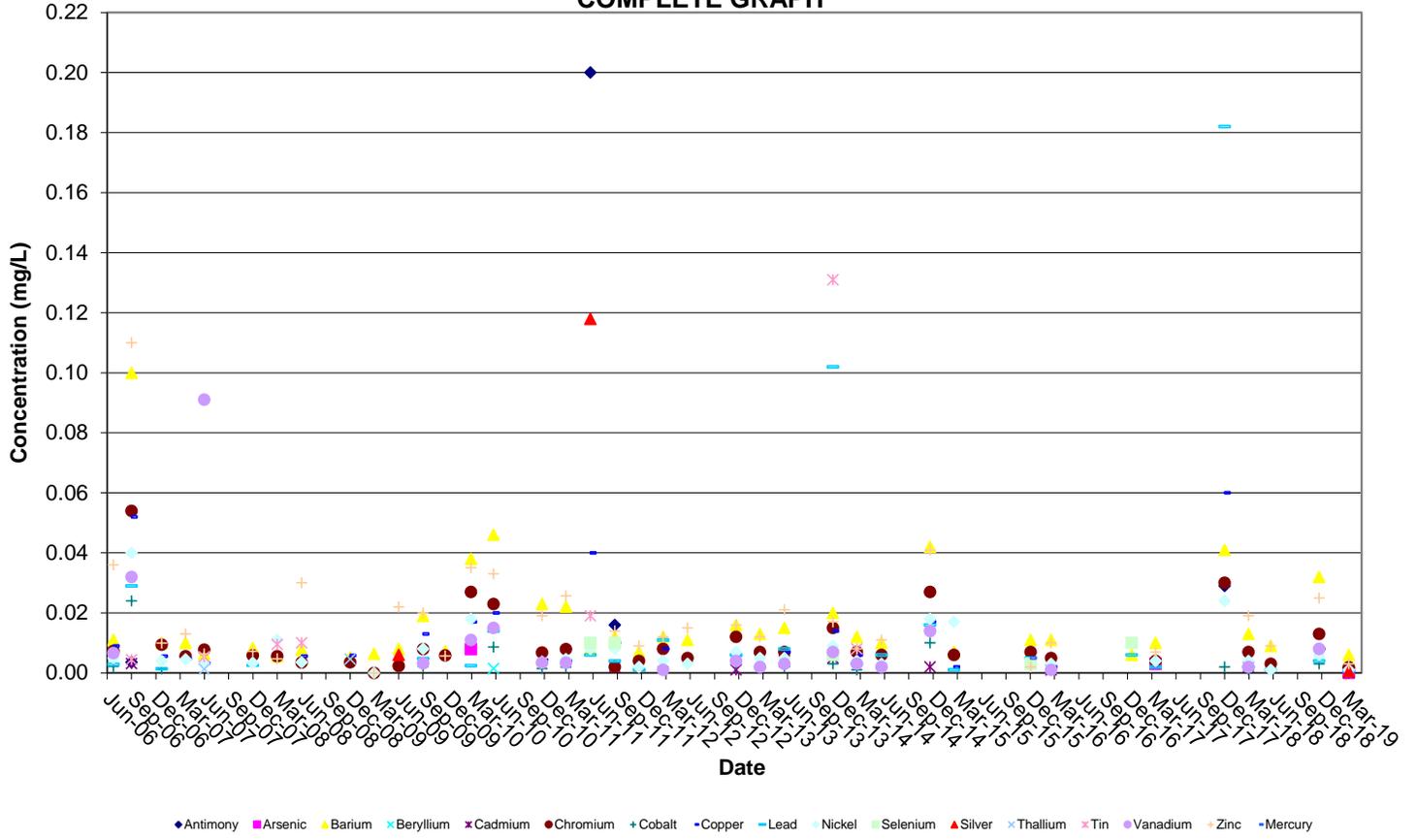
1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 2. Threshold value given is the Lifetime Health Advisory as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 5. Threshold value given is the Preliminary Remedial Goal (PRG) for tap water, as provided in the October 2002 USEPA Region 9 PRGs Table 2002 Update
 6. Constituent concentration was reported above its laboratory method detection limit, but lower than its laboratory reporting limit and historical reporting limit.
- However, the reporting limit this round was significantly higher than previous reporting limits. Therefore, to be consistent with historical data, only those constituents with concentrations lower than historical reporting limits were reported as non-detect.

No threshold value has been provided for parameters not identified in the sources listed above

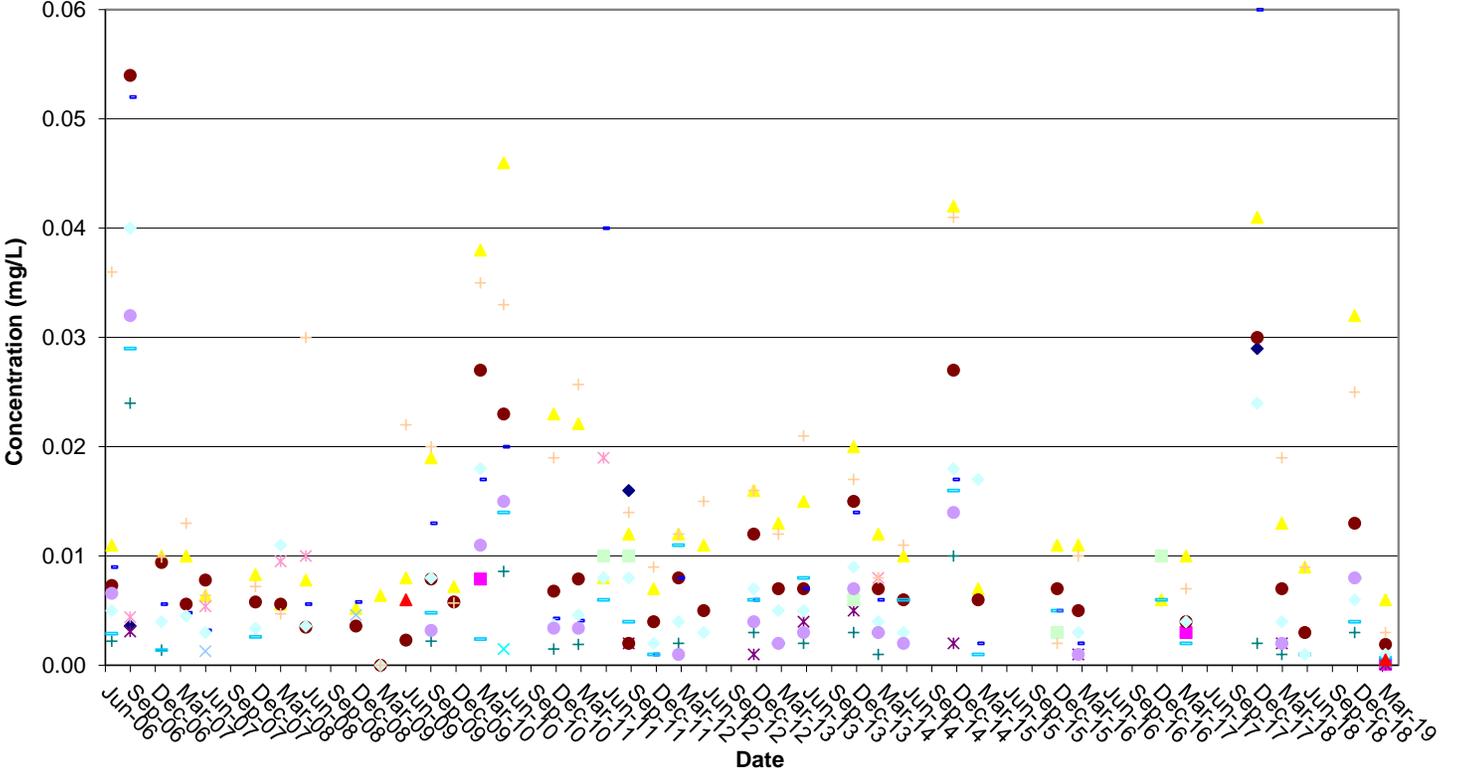
ATTACHMENT NO. 3
HISTORICAL DETECTED METALS GRAPHS

Detected Appendix A Metals in OW-9 Tiverton Landfill

COMPLETE GRAPH

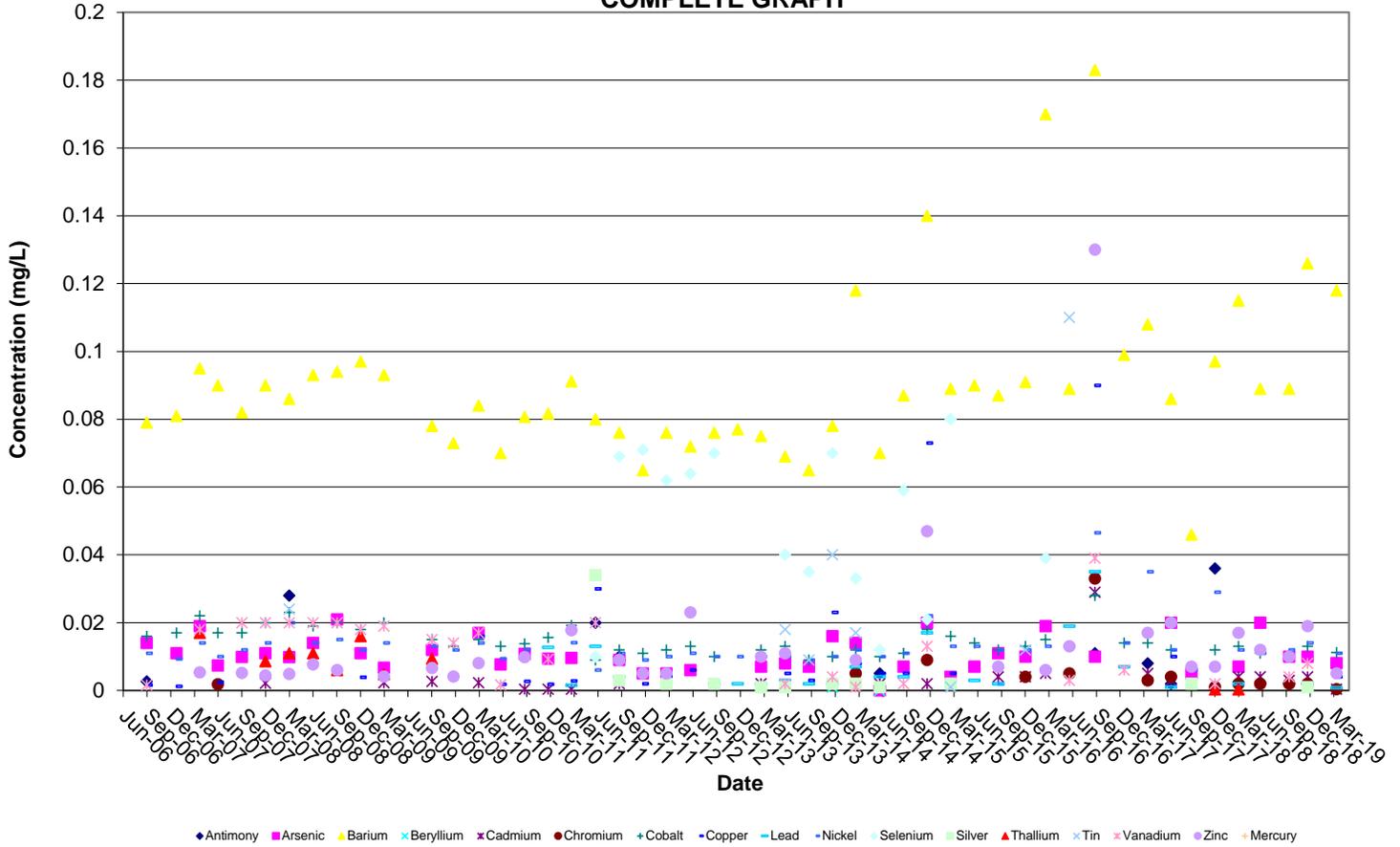


TRUNCATED GRAPH

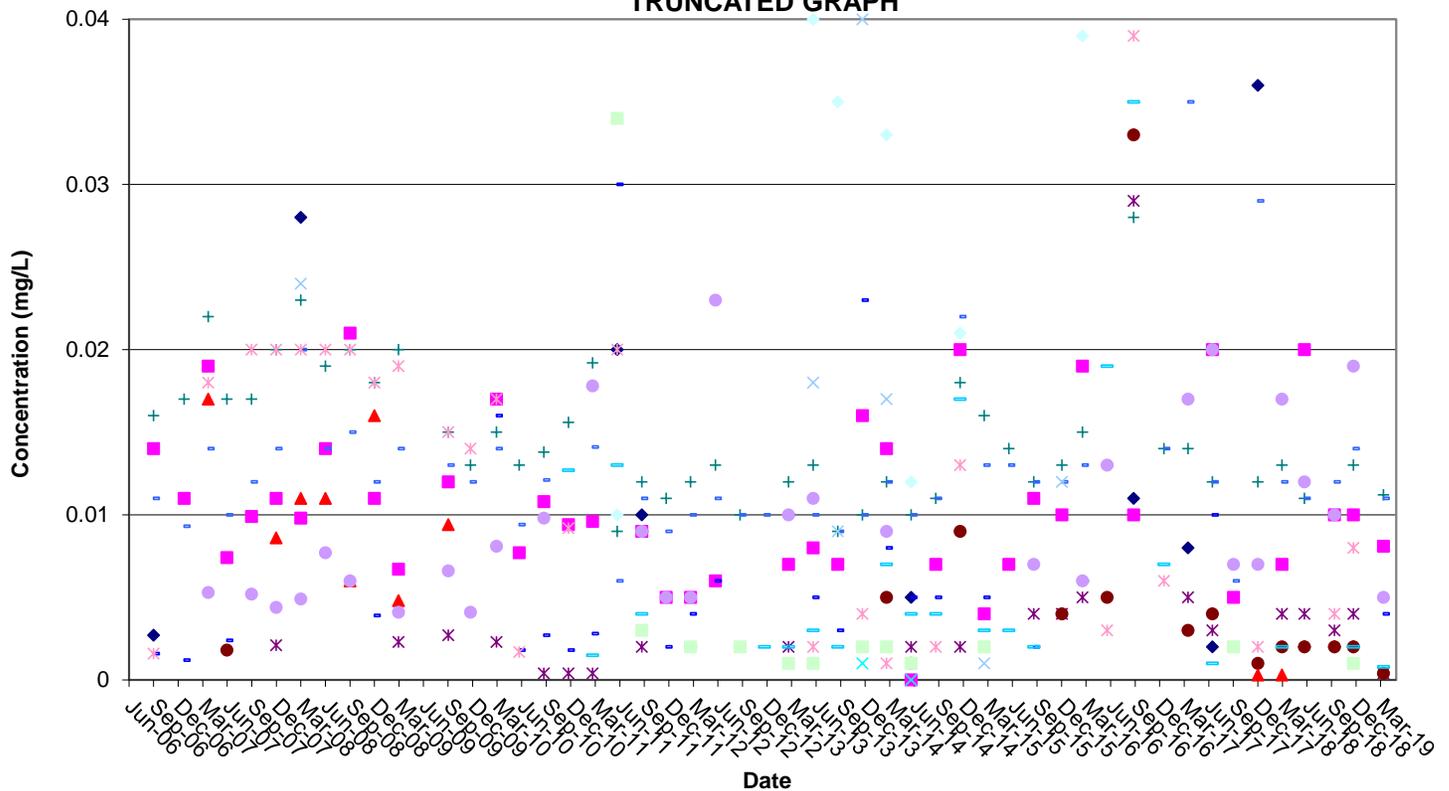


Detected Appendix A Metals in OW-13
Tiverton Landfill

COMPLETE GRAPH

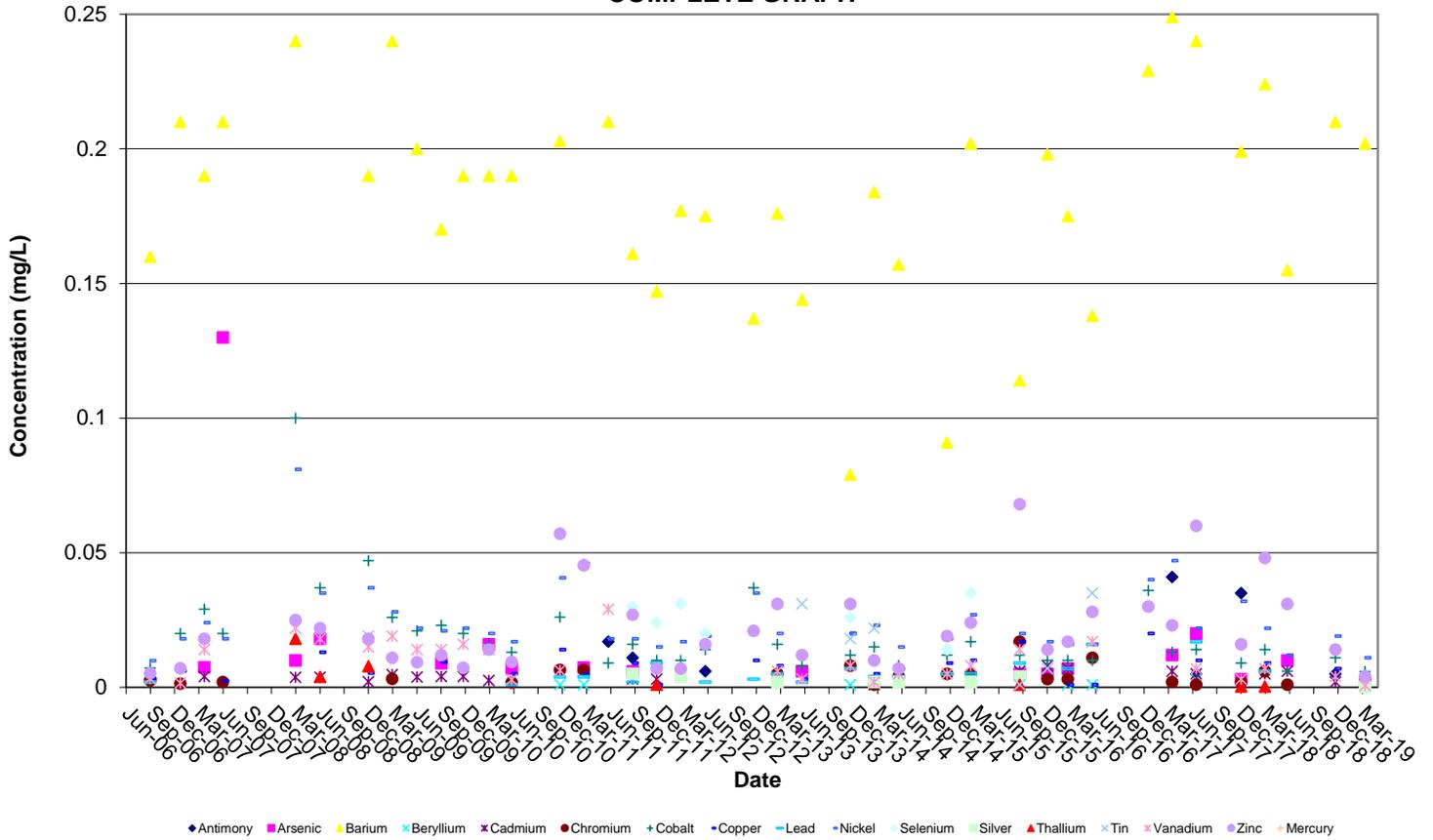


TRUNCATED GRAPH

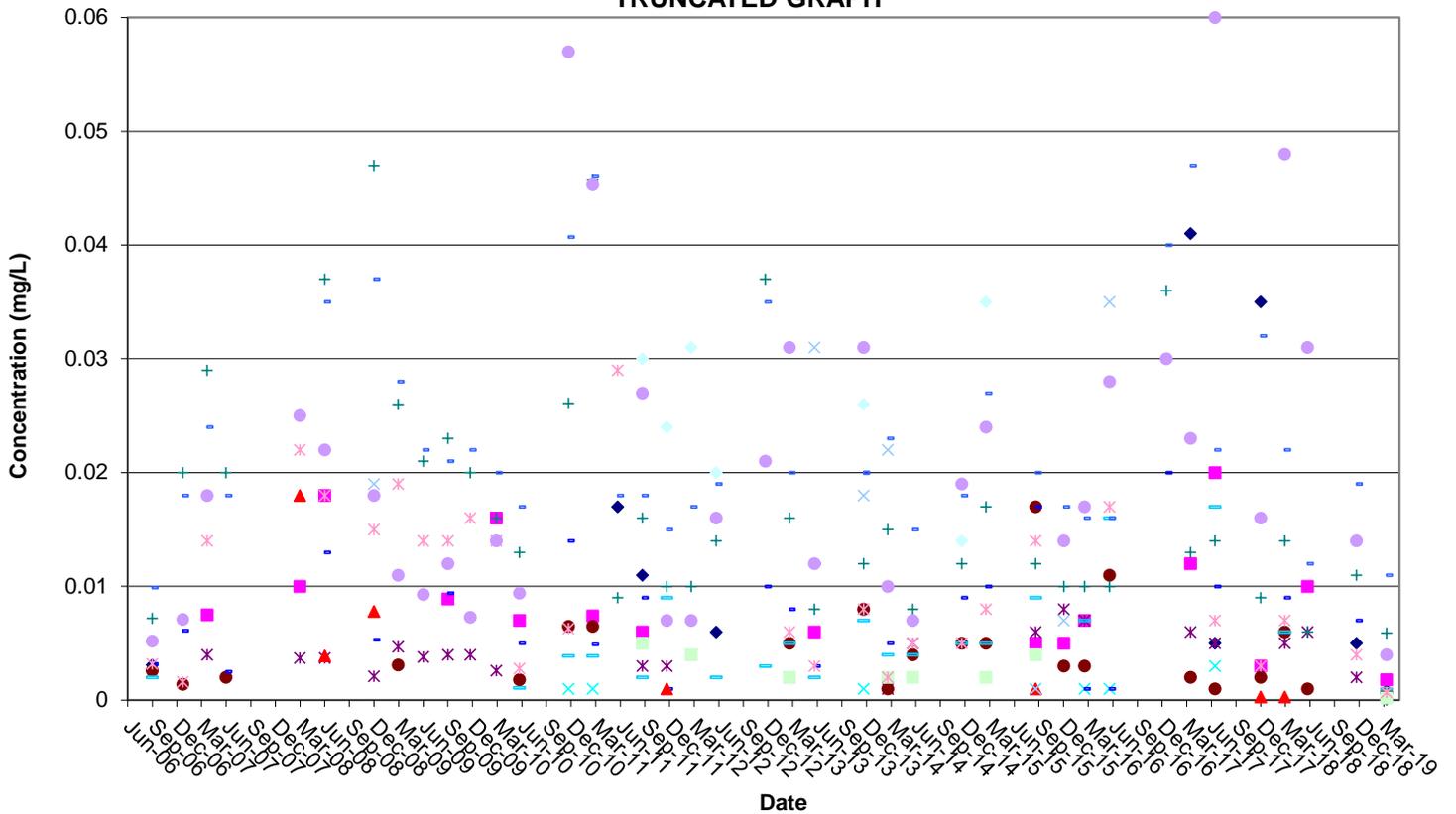


Detected Appendix A Metals in OW-14
Tiverton Landfill

COMPLETE GRAPH

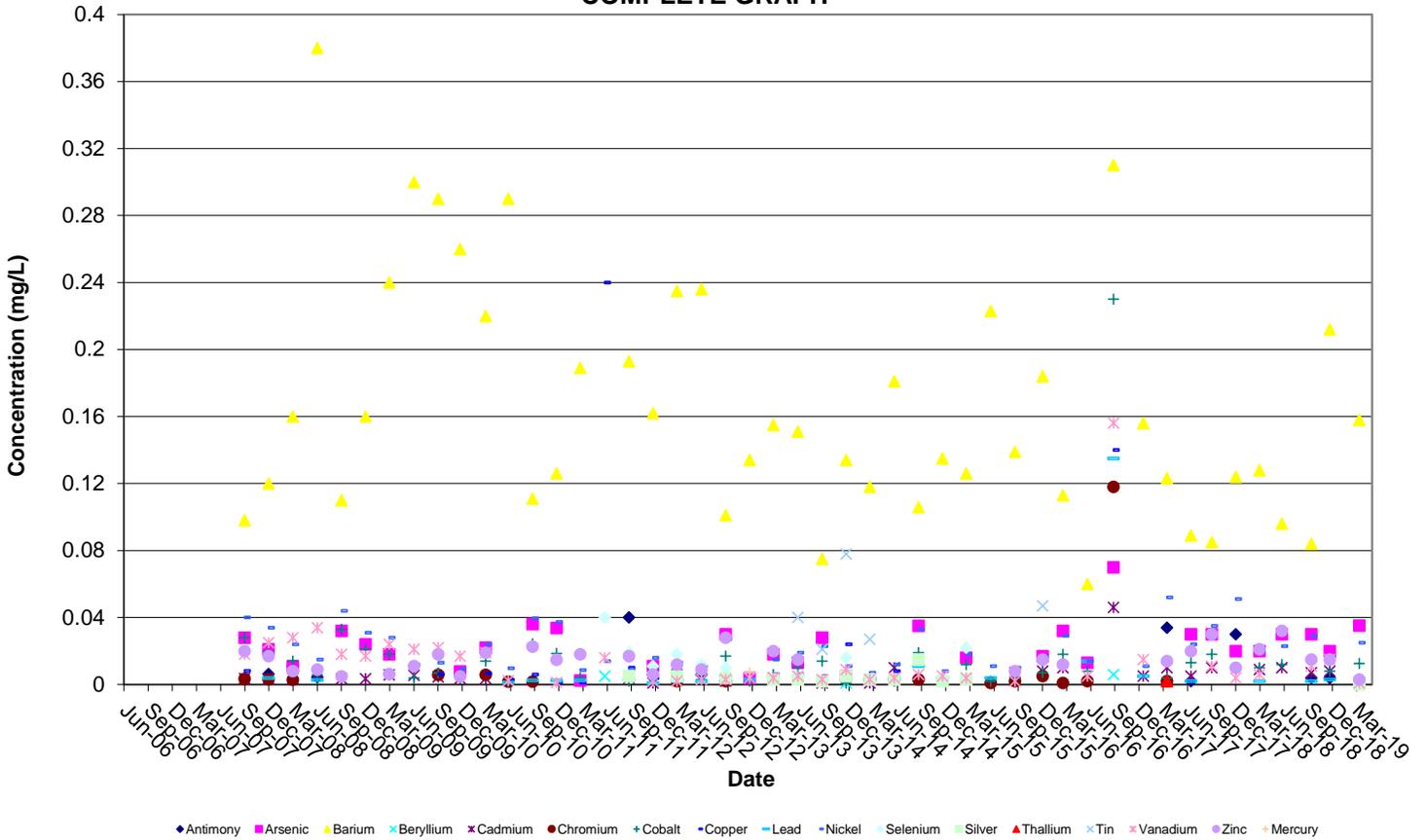


TRUNCATED GRAPH

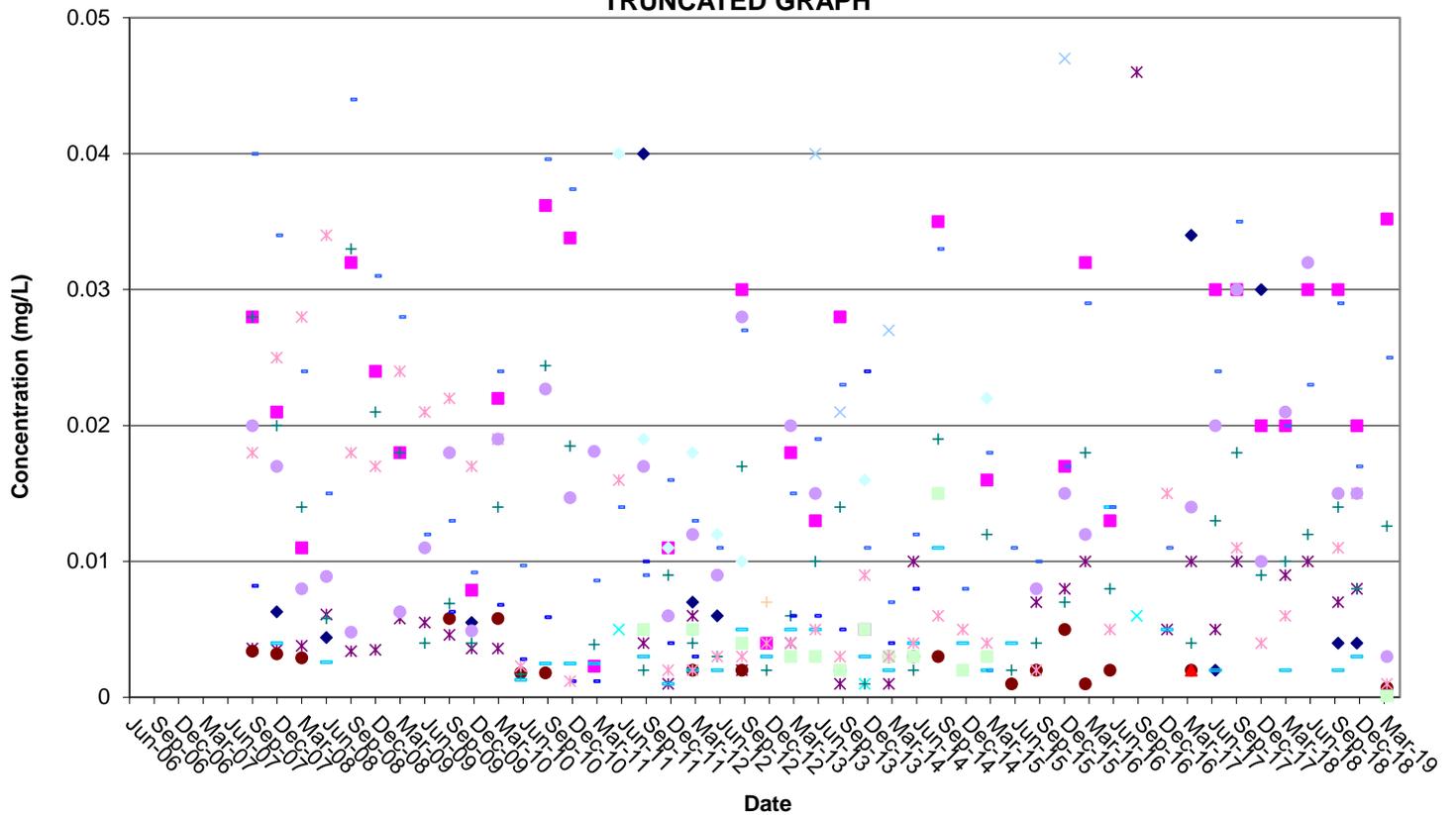


Detected Appendix A Metals in OW-15
Tiverton Landfill

COMPLETE GRAPH

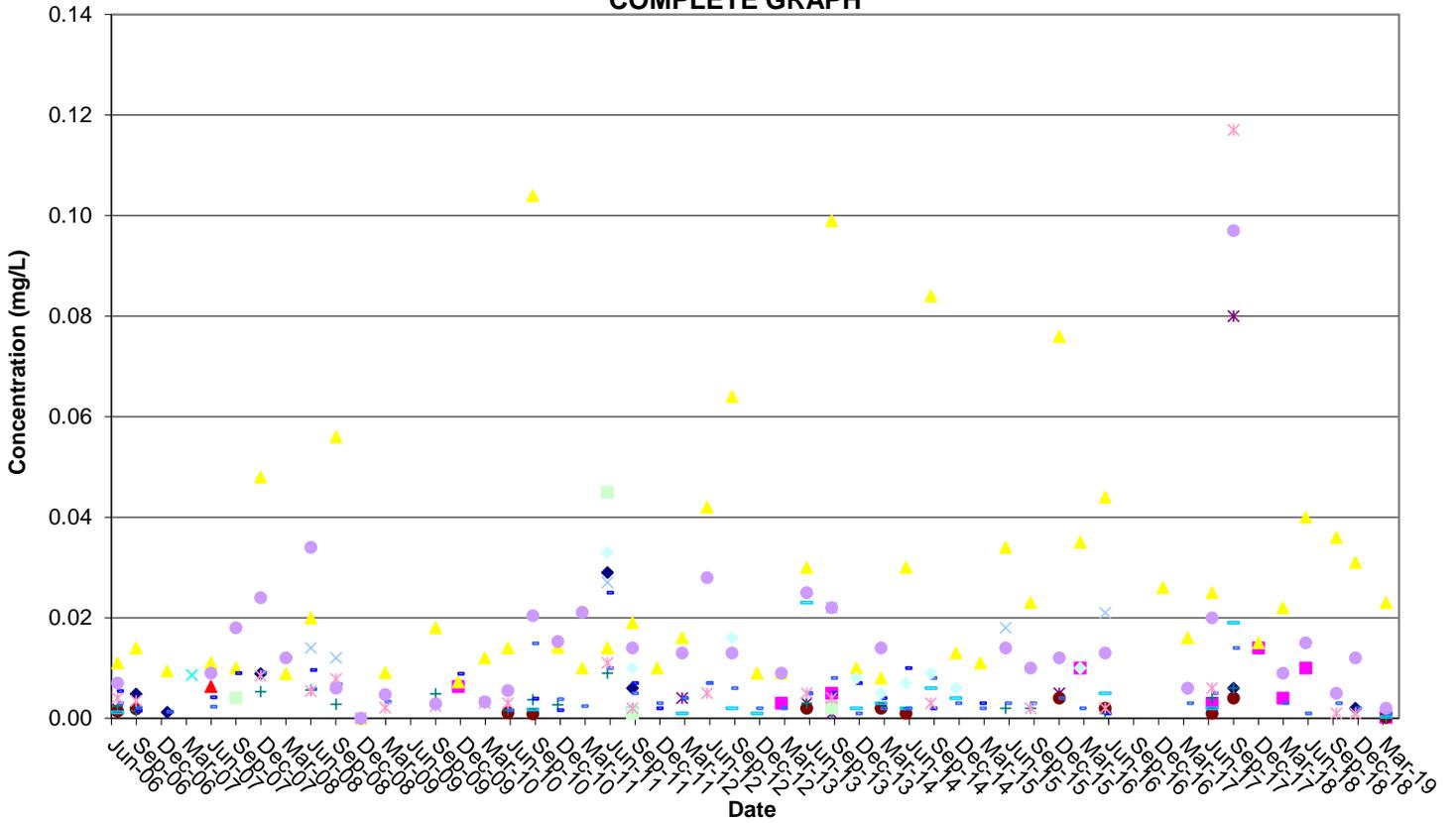


TRUNCATED GRAPH

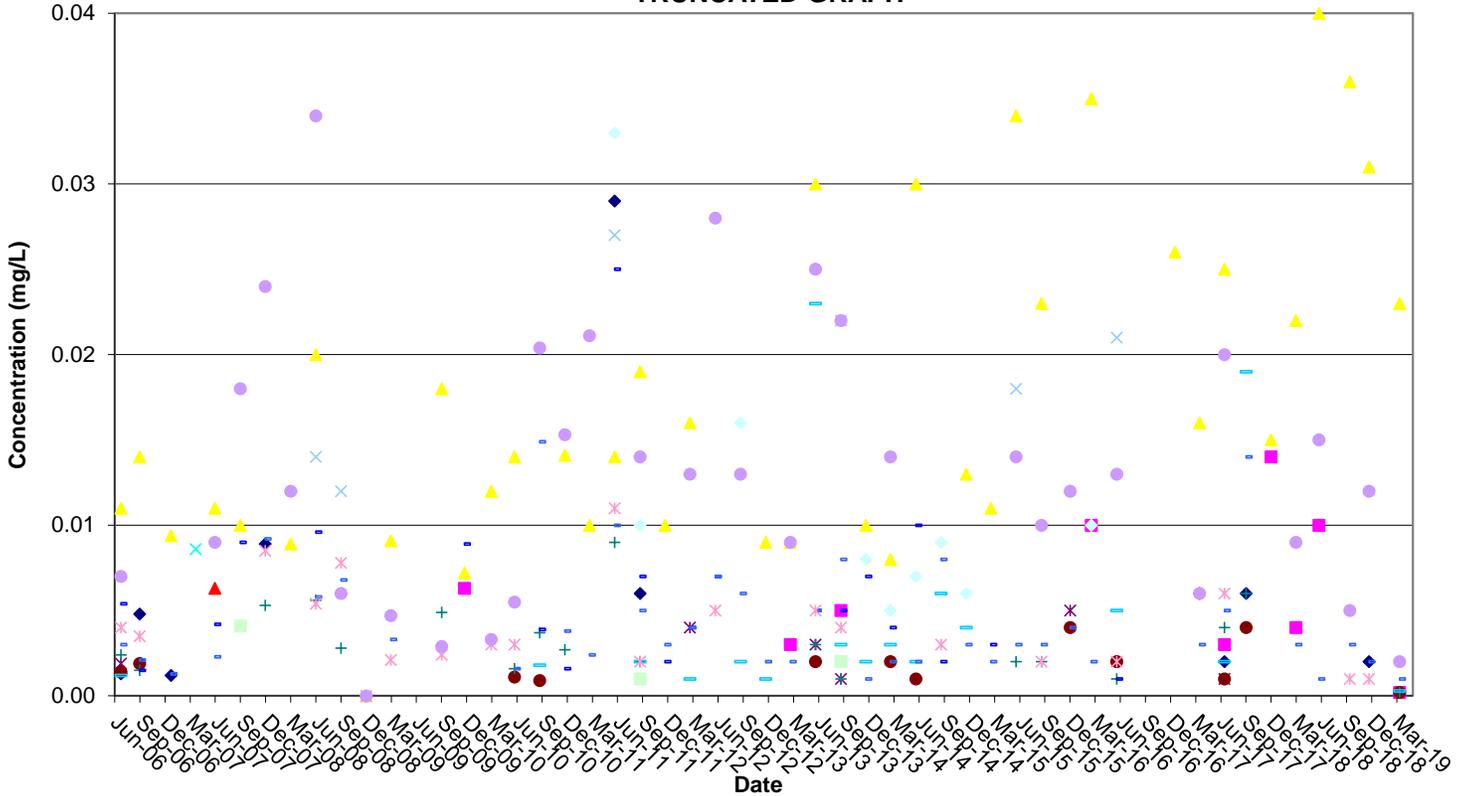


Detected Appendix A Metals at Surface Water Sampling Location SW-1 Tiverton Landfill

COMPLETE GRAPH

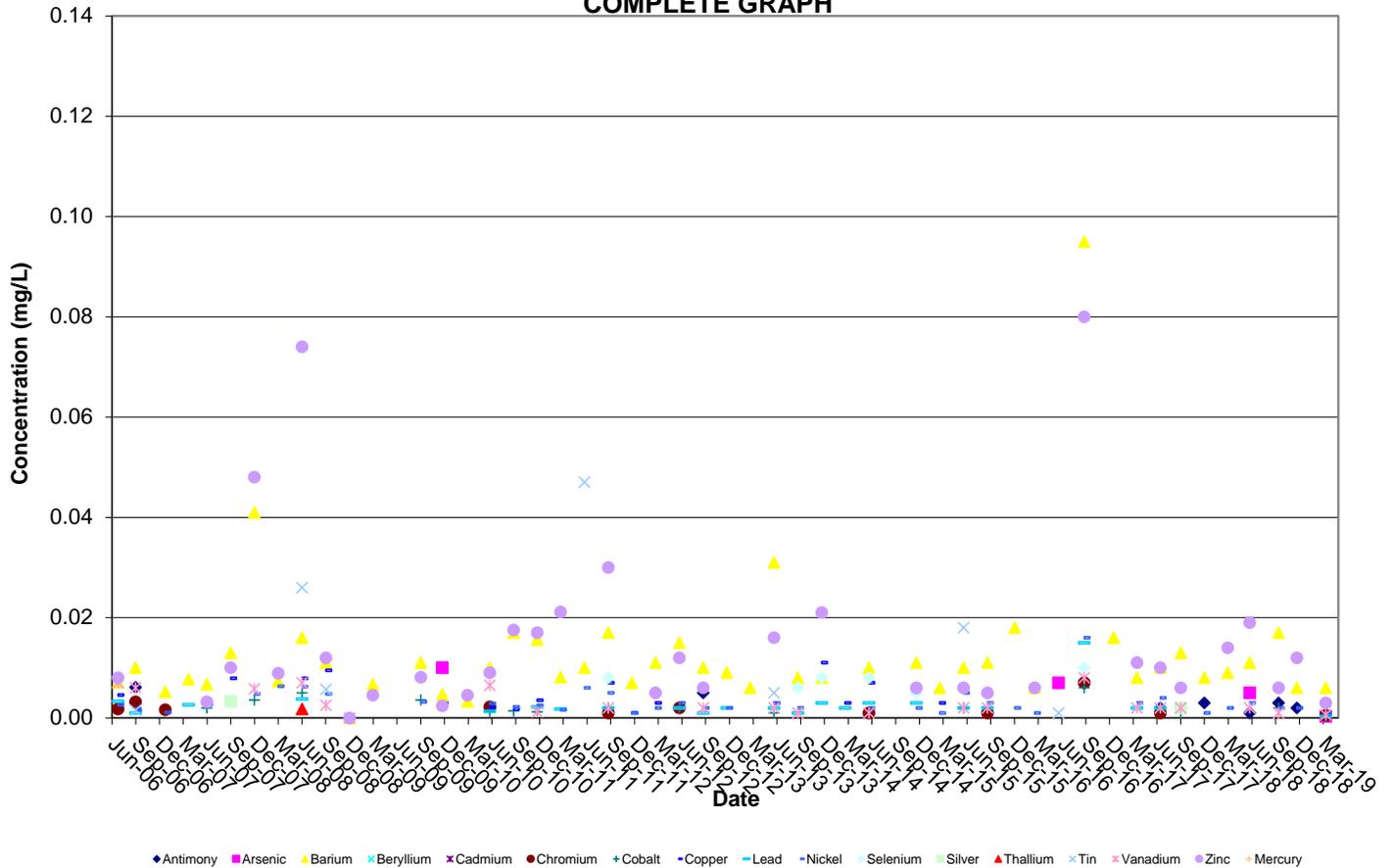


TRUNCATED GRAPH

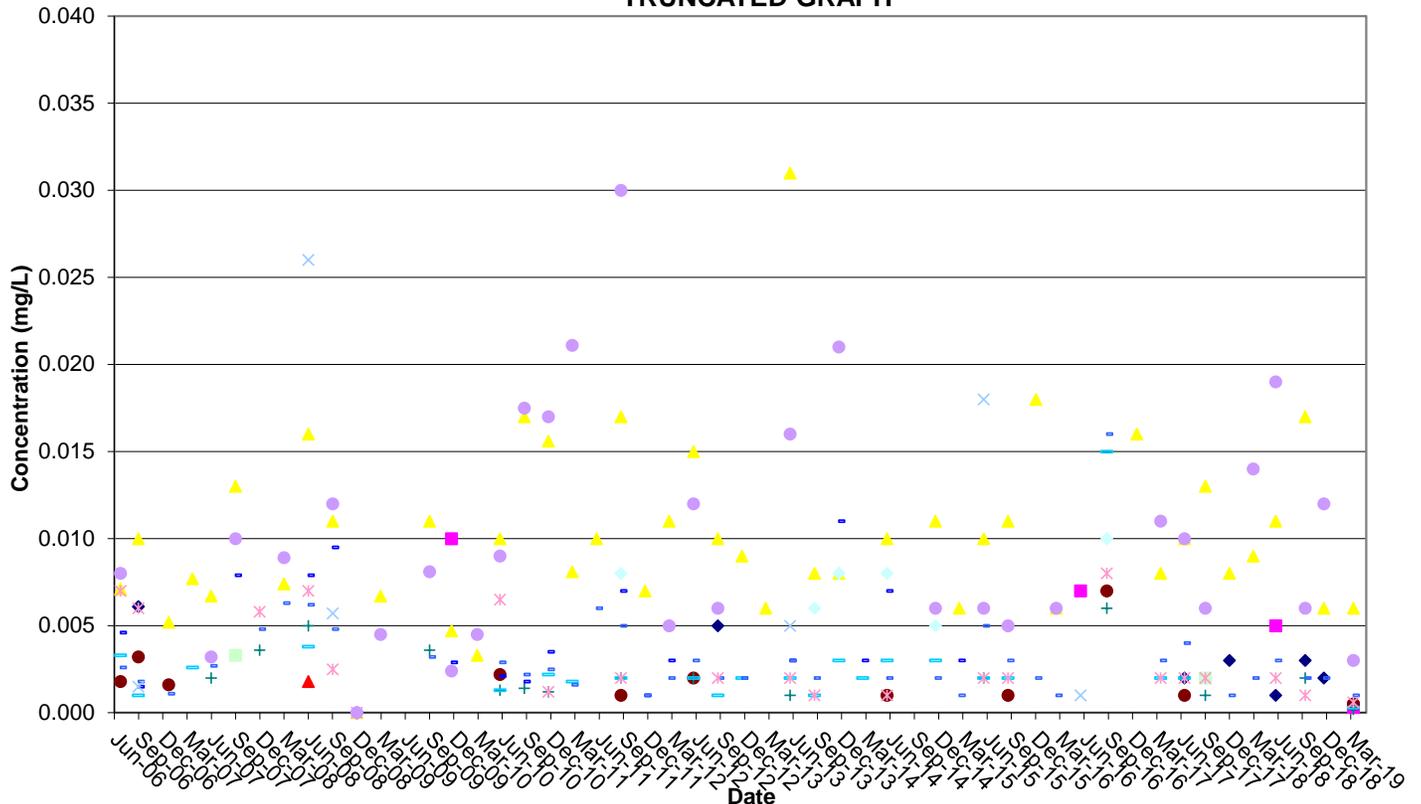


**Detected Appendix A Metals at Surface Water Sampling Location SW-2
Tiverton Landfill**

COMPLETE GRAPH

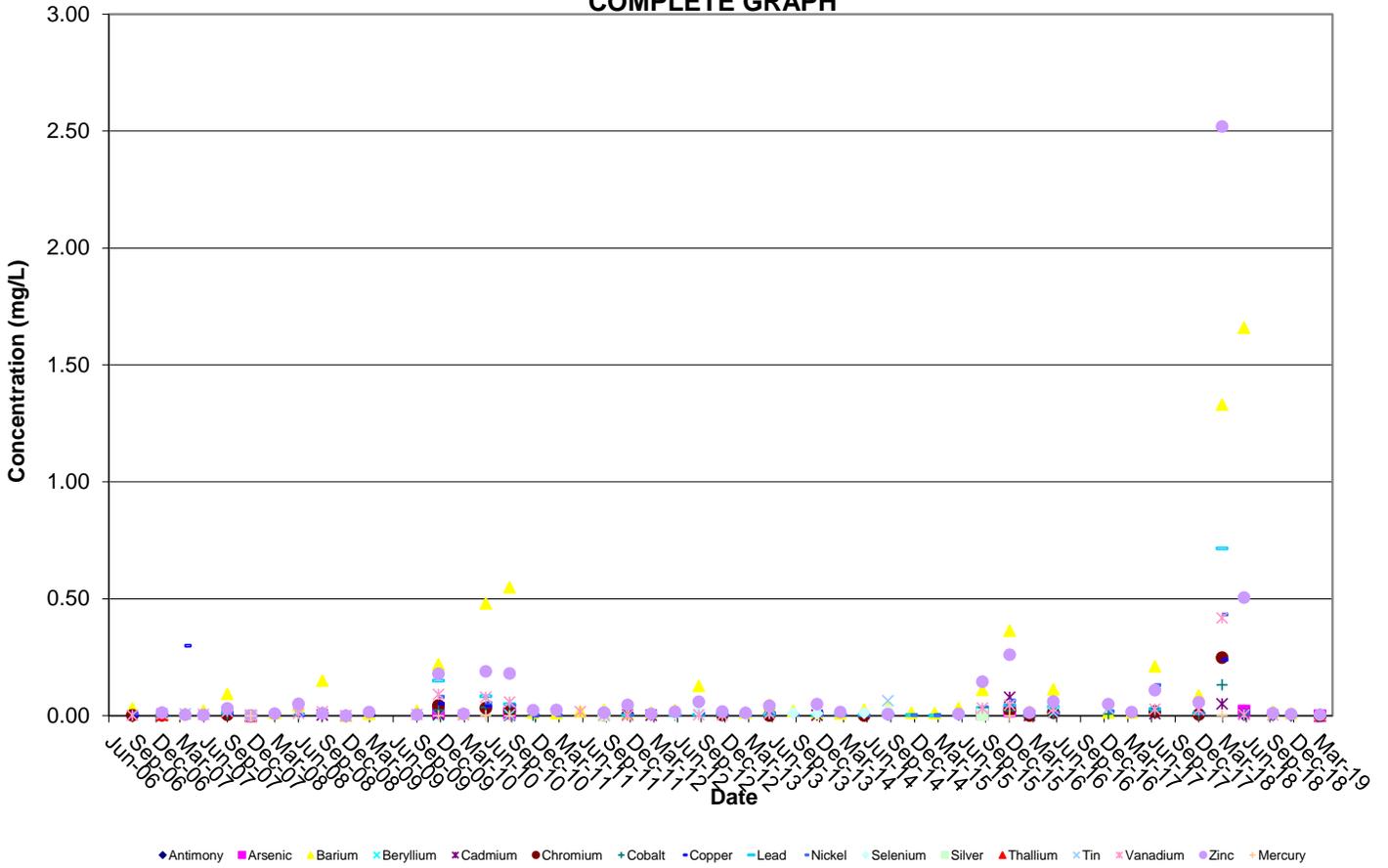


TRUNCATED GRAPH

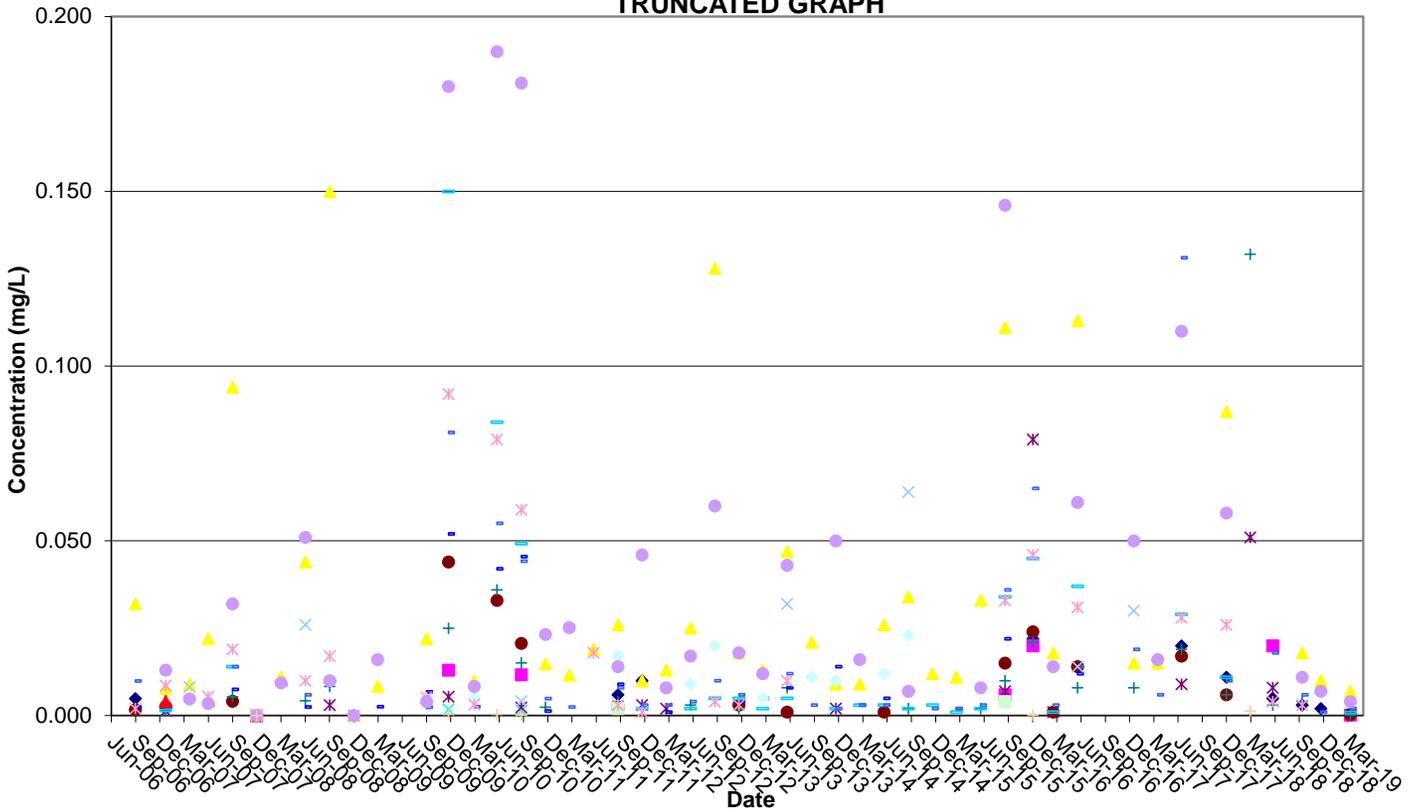


Detected Appendix A Metals at Surface Water Sampling Location SW-3
Tiverton Landfill

COMPLETE GRAPH



TRUNCATED GRAPH



ATTACHMENT NO. 4
TOLERANCE INTERVAL STATISTICAL EVALUATION

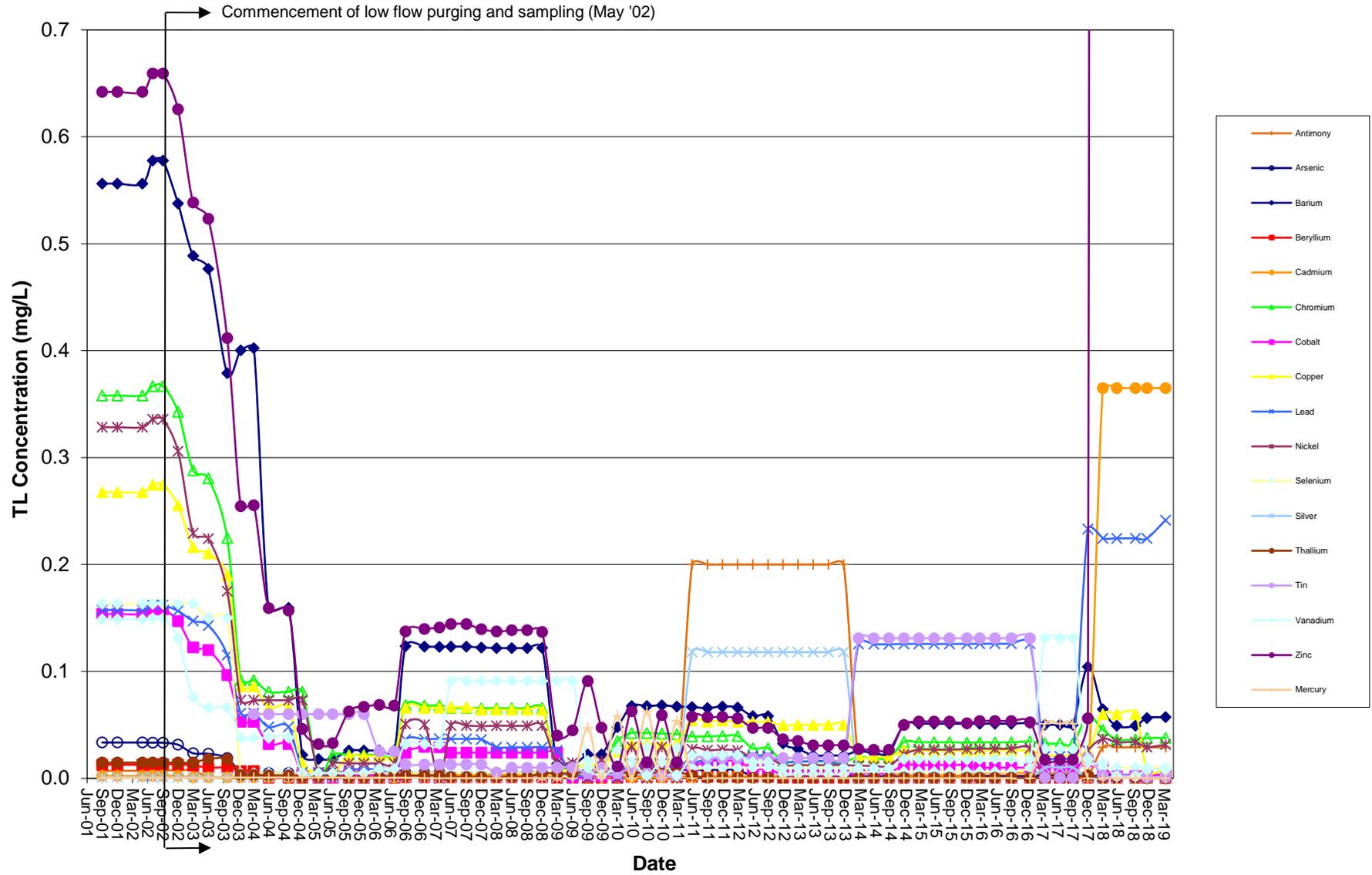
TABLE 3
SUMMARY OF GROUNDWATER MONITORING RESULTS - TOLERANCE INTERVAL COMPARISON
MAR 2019 - SAMPLE ROUND
 Concentration (units as specified for Threshold Value)

Parameter	OW-9		Threshold Value	Background Well		Compliance wells				
	Tolerance Limit * TL=AVG+K'S			OW-9	OW-7	OW-12	OW-13	OW-14	OW-15	OW-16
METALS										
Antimony	0.0290 mg/L	0.006 mg/L ¹	0.0001	ND	ND	ND	0.0001	ND	ND	
Arsenic	0.0030 mg/L	0.010 mg/L ¹	0.0001	0.0002	ND	0.0081	0.0018	0.0352	ND	
Barium	0.0572 mg/L	2 mg/L ¹	0.006	0.034	0.02	0.118	0.202	0.158	0.014	
Beryllium	0.0003 mg/L	0.004 mg/L ¹	0.0003	ND	ND	ND	ND	ND	0.0001	
Cadmium	0.3650 mg/L	0.005 mg/L ¹	0.0001	0.0007	0.0004	0.0004	ND	ND	0.0003	
Chromium	0.0378 mg/L	0.1 mg/L ¹	0.0019	0.0011	ND	0.0004	0.0007	0.0007	ND	
Cobalt	0.0030 mg/L	0.73 mg/L ²	0.0003	0.0090	0.0005	0.0112	0.0059	0.0126	0.0008	
Copper	0.0080 mg/L	1.3 mg/L ¹	ND	0.002	ND	0.004	ND	ND	ND	
Lead	0.2414 mg/L	0.015 mg/L ¹	0.0007	0.0013	ND	0.0008	0.0010	0.0003	ND	
Mercury	0.0001 mg/L	0.002 mg/L ¹	ND	ND	ND	ND	ND	ND	ND	
Nickel	0.0315 mg/L	0.1 mg/L ²	0.001	0.011	0.01	0.011	0.011	0.025	0.002	
Selenium	0.0100 mg/L	0.05 mg/L ¹	ND	ND	ND	ND	ND	ND	ND	
Silver	0.0005 mg/L	0.1 mg/L ^{2,3}	0.0005	0.0002	0.003	ND	0.0002	0.0001	0.0001	
Thallium	0.0001 mg/L	0.002 mg/L ¹	ND	ND	ND	ND	ND	ND	ND	
Tin	0.0010 mg/L	22 mg/L ⁵	ND	ND	ND	ND	ND	ND	ND	
Vanadium	0.0080 mg/L	0.26 mg/L ⁵	ND	0.0013	ND	ND	0.0007	0.0010	ND	
Zinc	14.7679 mg/L	2 - 5 mg/L ^{2,3}	0.0030	0.006	ND	0.005	0.004	0.003	0.004	
VOCS										
Acetone		610 µg/L ³								
Acrylonitrile		0.039 µg/L ²								
Benzene		5 µg/L ¹								
Bromochloromethane		80 µg/L ⁴								
Bromodichloromethane (THM)		90 µg/L ¹								
Bromoform		80 µg/L ¹								
Carbon disulfide		1000 µg/L ³								
Carbon tetrachloride		5 µg/L ¹								
Chlorobenzene		100 µg/L ¹								
Chloroethane		4.6 µg/L ²								
Chloroform		80 µg/L ¹								
Chlorodibromomethane (THM)		80 µg/L ¹								
1,2-Dibromo-3-chloropropane (DBCP)		0.2 µg/L ¹								
1,2-Dibromoethane (EDB)		0.05 µg/L ¹								
1,2-Dichlorobenzene		600 µg/L ¹								
1,4-Dichlorobenzene		75 µg/L ¹								
trans-1,4-Dichloro-2-butene		µg/L								
1,1 -Dichloroethane		5 µg/L								
1,2-Dichloroethane		5 µg/L ¹								
1,1-Dichloroethylene		7 µg/L ¹								
cis-1,2-Dichloroethene		70 µg/L ¹								
trans-1,2-Dichloroethene		100 µg/L ¹								
1,2-Dichloropropane		5 µg/L ¹								
cis-1,3-Dichloropropene		µg/L								
trans-1,3-Dichloropropene		µg/L								
Ethylbenzene		700 µg/L ¹								
Methyl butyl ketone(2-Hexanone)		160 µg/L ²								
Bromomethane		10 µg/L ⁴								
Chloromethane		30 µg/L ⁴								
Dibromomethane		61 µg/L ³								
Methylene chloride		5 µg/L ¹								
Methyl ethyl ketone(2-Butanone)		4000 µg/L ²								
Methyl iodide		µg/L								
4-Methyl-2-pentanone		µg/L								
Styrene		100 µg/L ¹								
1,1,1,2-Tetrachloroethane		70 µg/L ⁴								
1,1,2,2-Tetrachloroethane		0.3 µg/L ⁴								
Tetrachloroethylene(PCE)		5 µg/L ¹								
Toluene		1000 µg/L ¹								
1,1,1-Trichloroethane		200 µg/L ¹								
1,1,2-Trichloroethane		5 µg/L ¹								
Trichloroethylene(TCE)		5 µg/L ¹								
Trichlorofluoromethane		2000 µg/L ⁴								
1,2,3-Trichloropropane		40 µg/L ⁴								
Vinyl acetate		410 µg/L ³								
Vinyl chloride		2 µg/L ¹								
Xylenes		10000 µg/L ¹								
Methyl tert-butyl ether (MTBE)		20 - 40 µg/L ¹								

1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 2. Threshold value given is the lifetime health advisory as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
 5. Threshold value given is the Preliminary Remedial Goal (PRG) for tap water, as provided in the October 2002 USEPA Region 9 PRGs Table 2002 Update
 6. Constituent concentration was reported above its laboratory method detection limit, but lower than its laboratory reporting limit and historical reporting limit.
 However, the reporting limit this round was significantly higher than previous reporting limits. Therefore, to be consistent with historical data, only those constituents with concentrations lower than historical reporting limits were reported as non-detect.

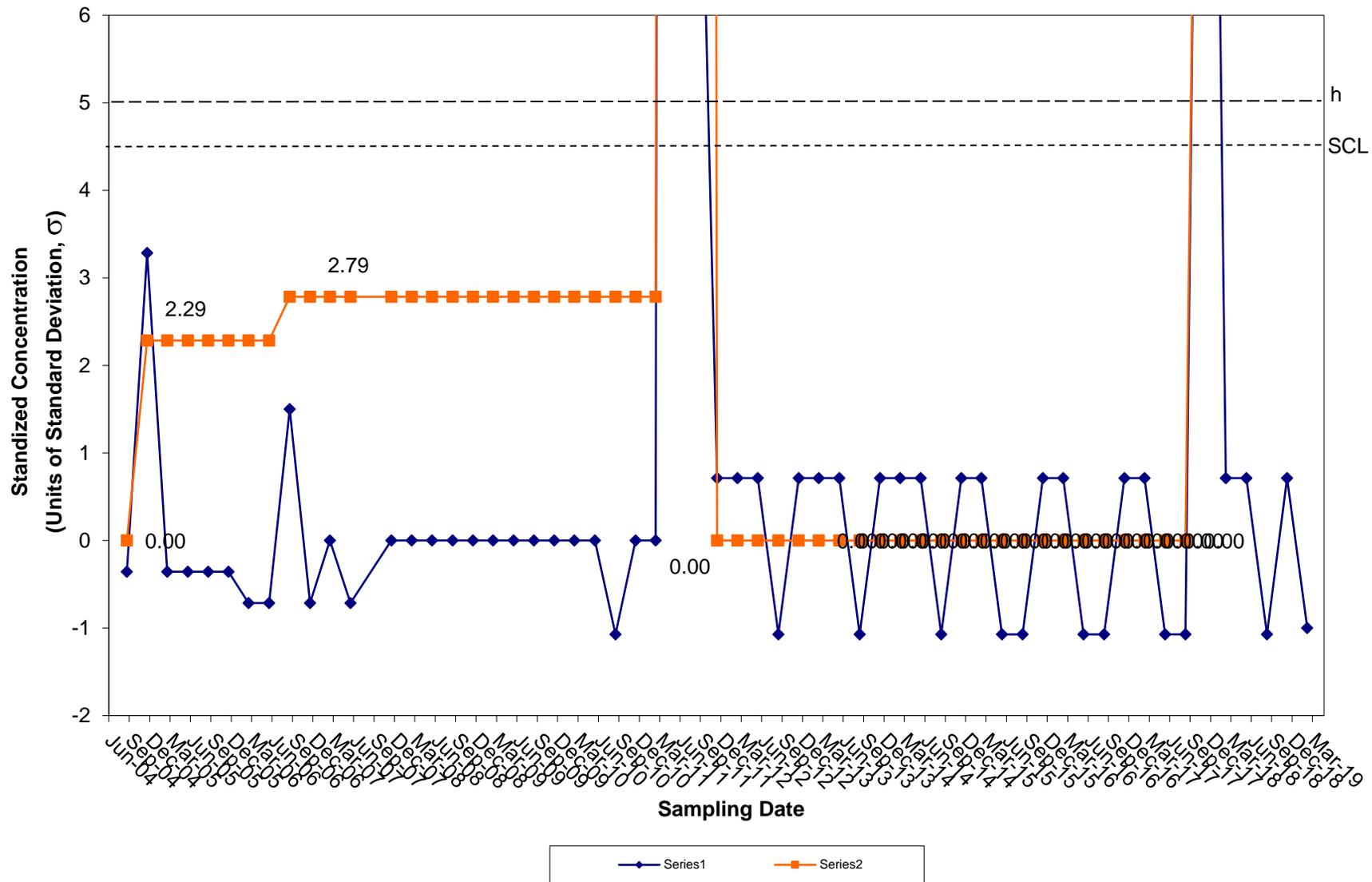
No threshold value has been provided for parameters not identified in the sources listed above
 * = Exceedance of TL
 ND = Not Detected
 † Tolerance Limit (TL) constructed from background (upgradient) well data from OW-9.

Historical Tolerance Limit Concentrations from Background Well Tiverton Landfill Compliance Sampling

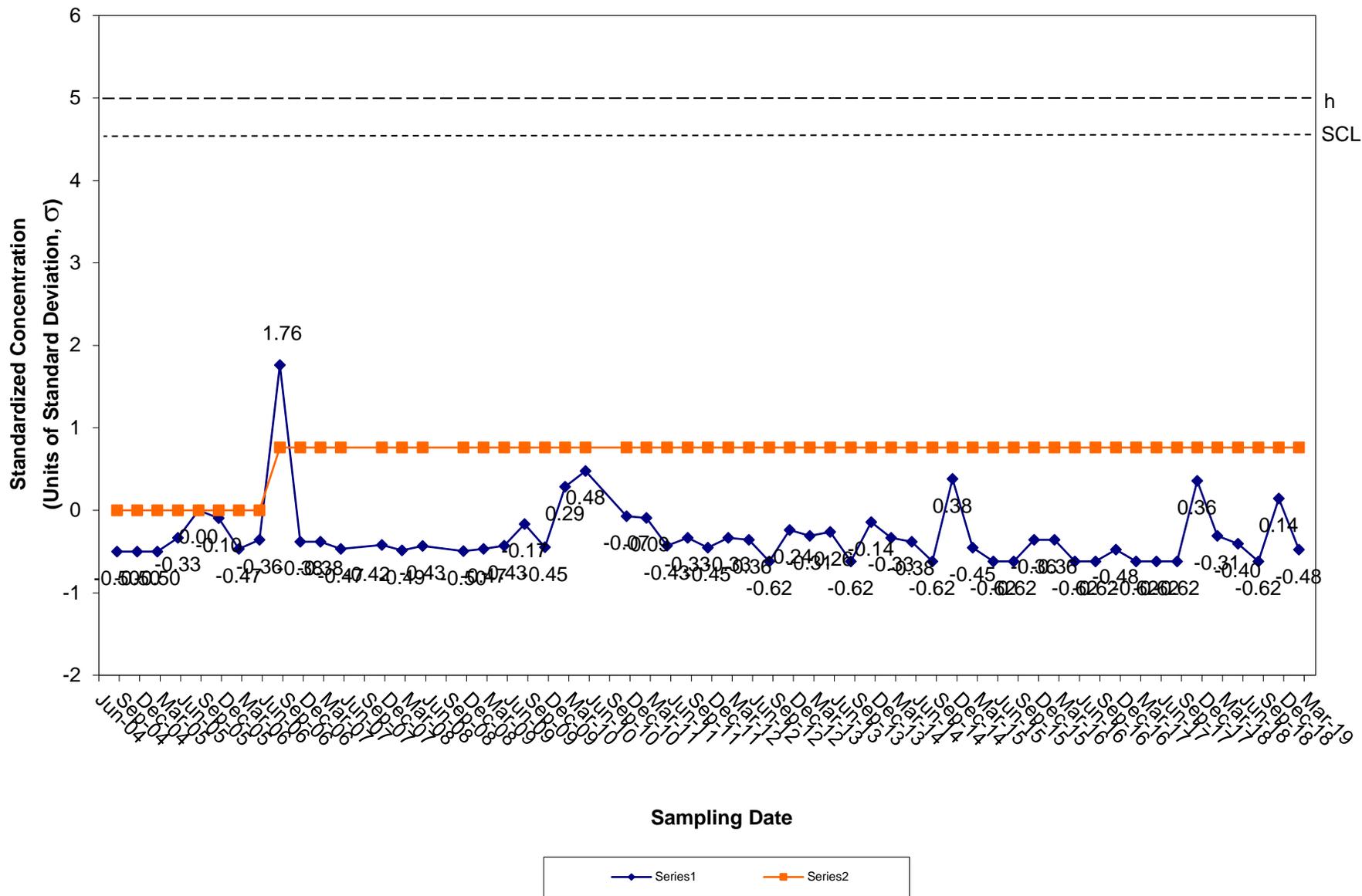


ATTACHMENT NO. 5
CUSUM METHOD STATISTICAL EVALUATION

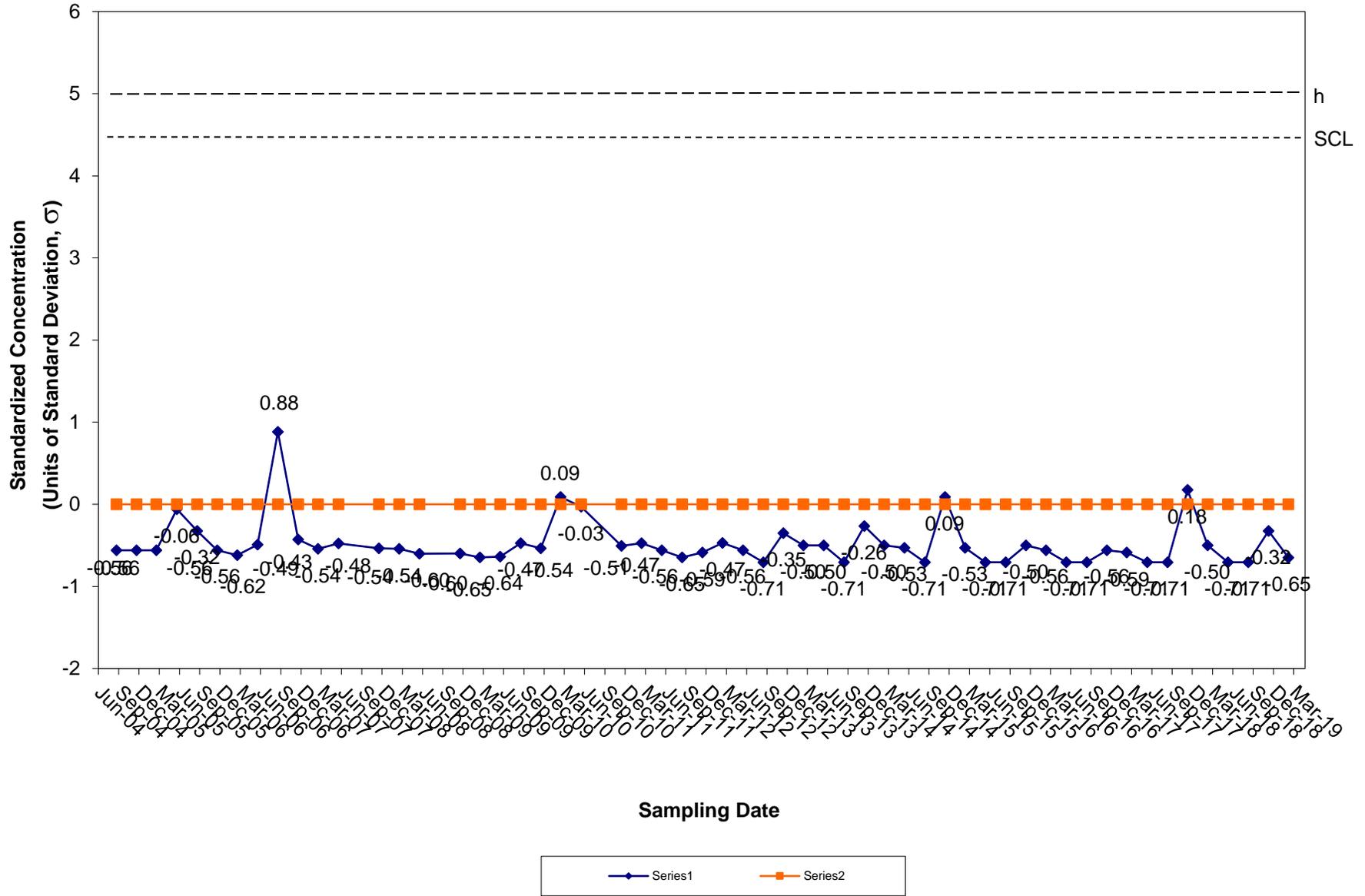
CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-9



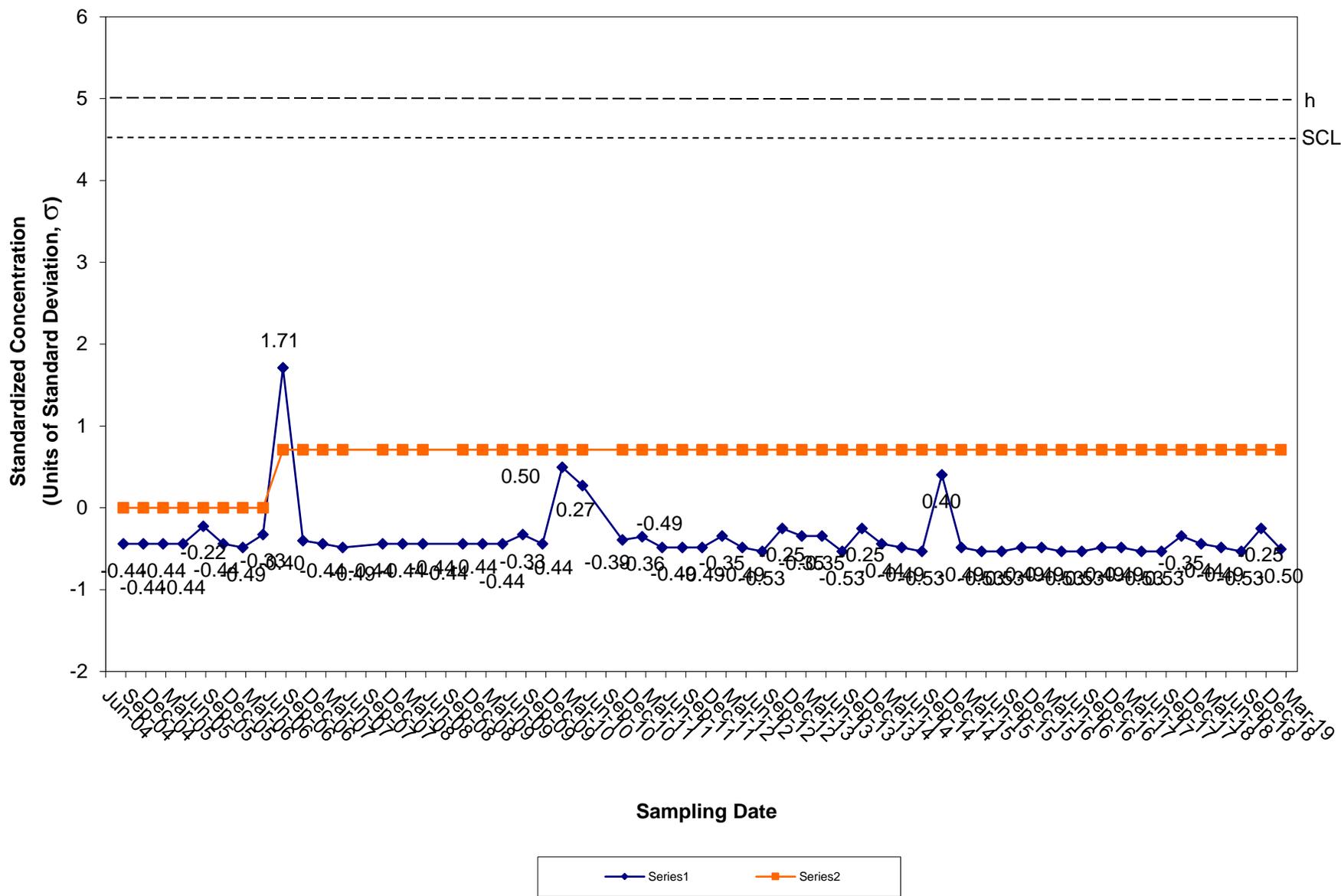
CUSUM Control Chart for Barium Tiverton Landfill Groundwater Background Well OW-9



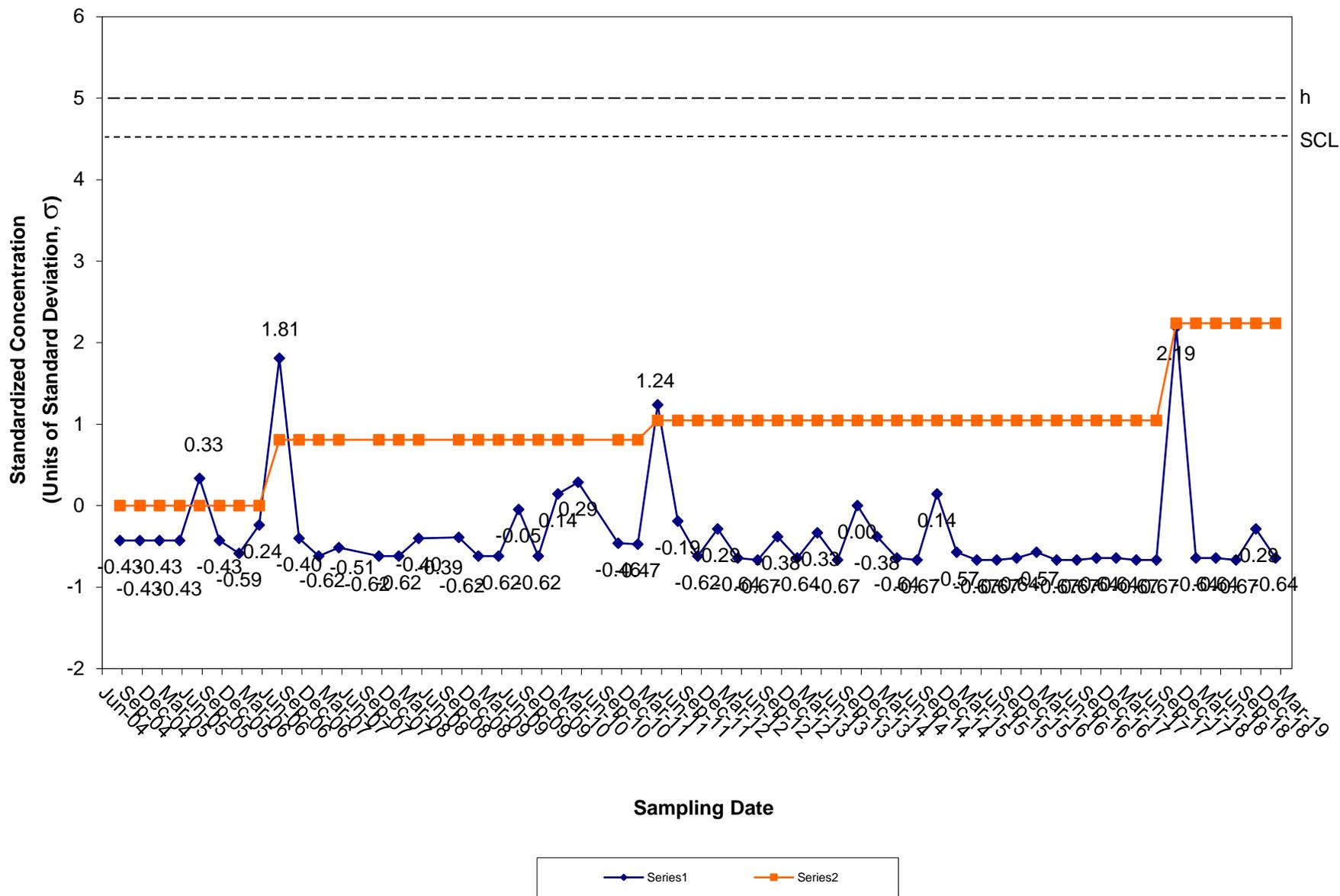
CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Background Well OW-9



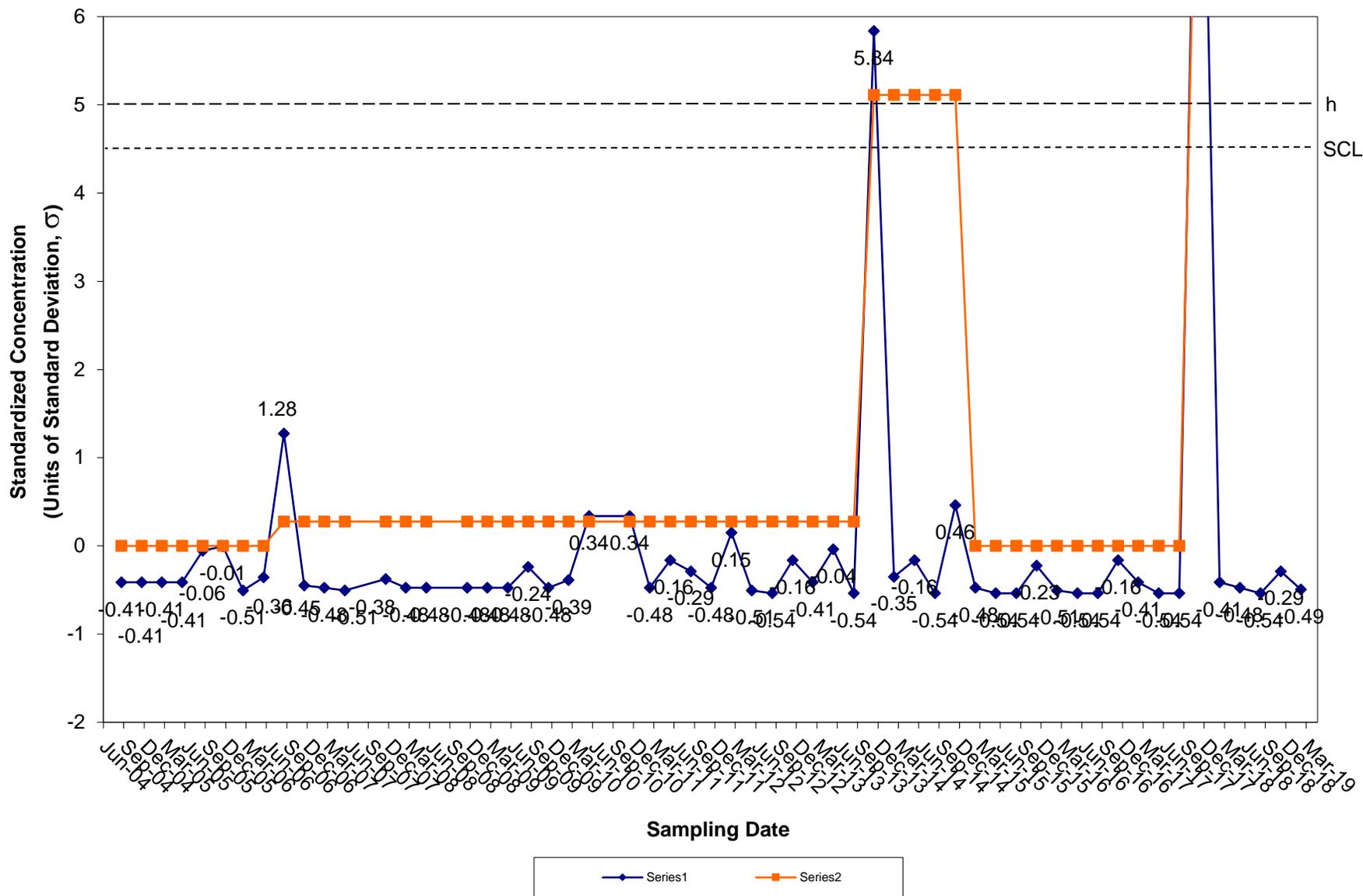
CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Background Well OW-9



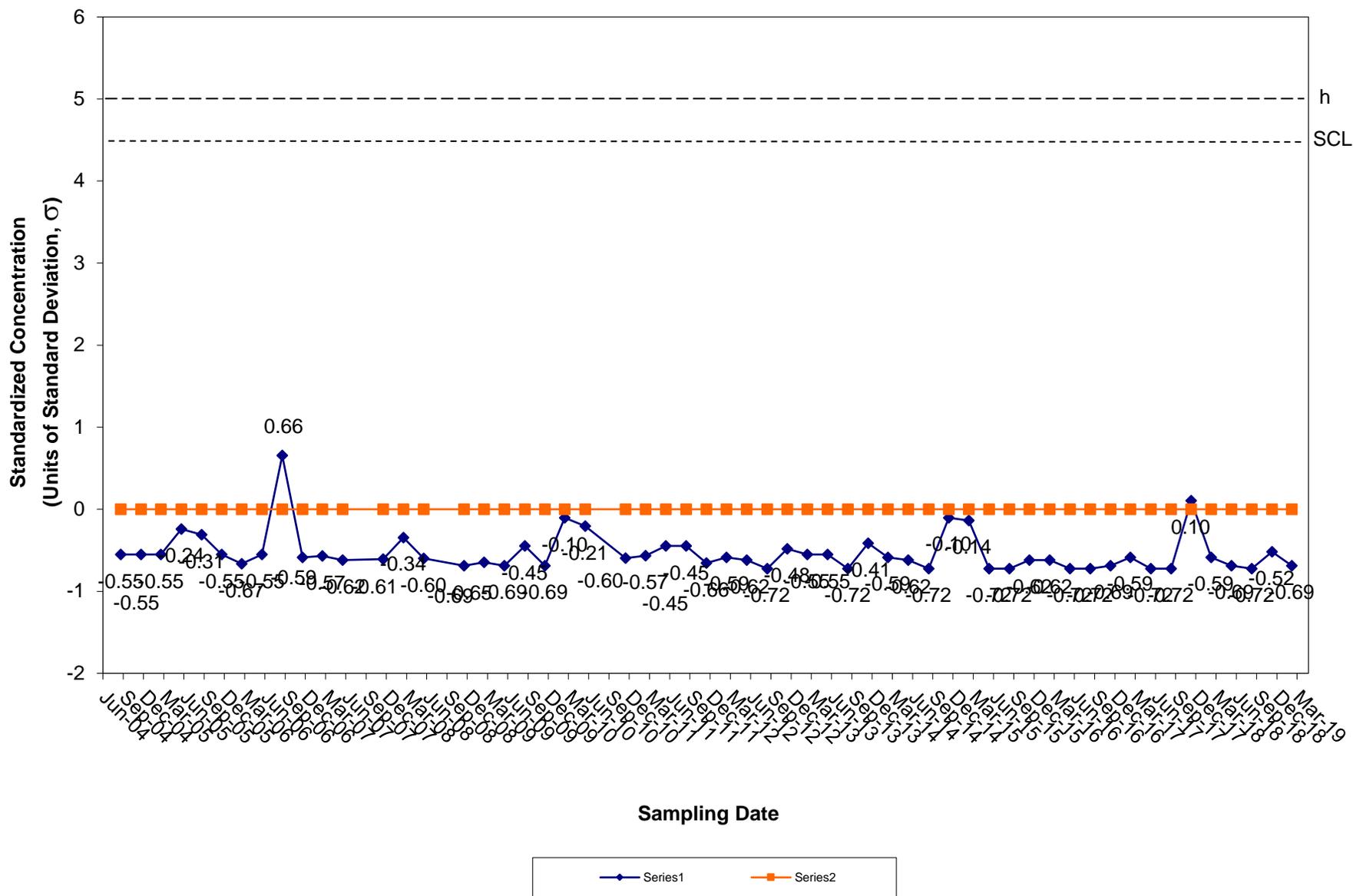
CUSUM Control Chart for Copper Tiverton Landfill Groundwater Background Well OW-9



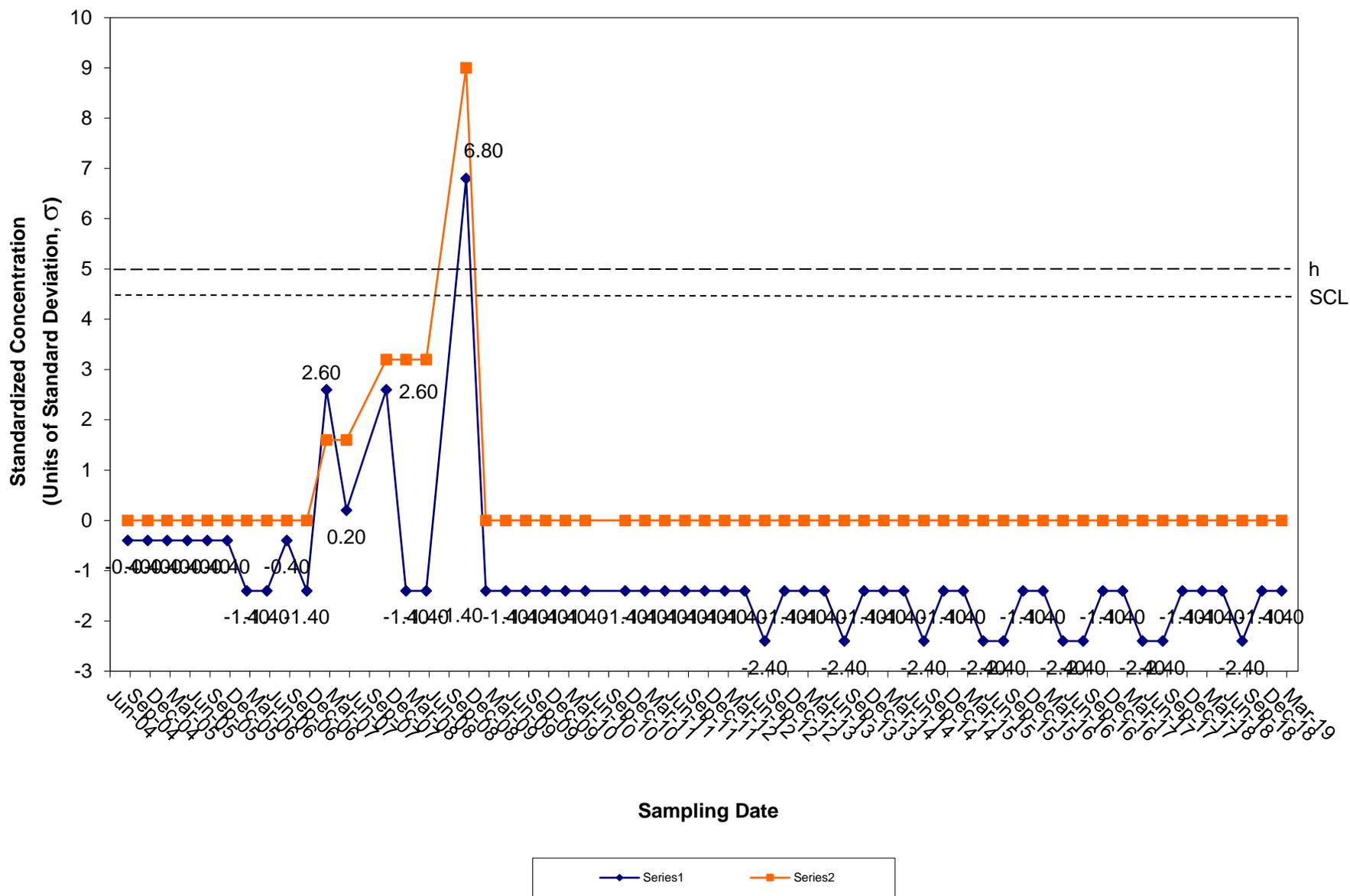
CUSUM Control Chart for Lead Tiverton Landfill Groundwater Background Well OW-9



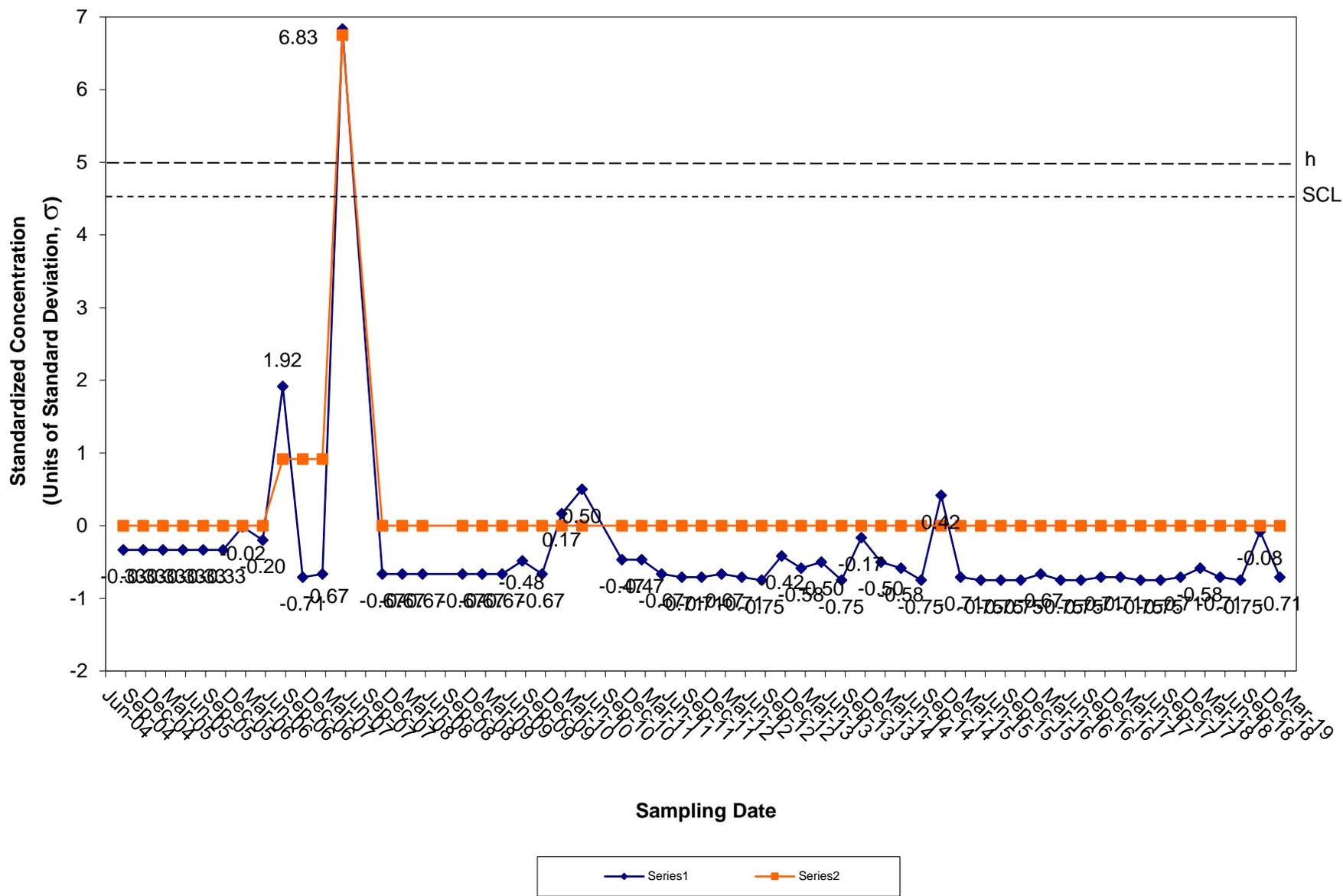
CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Background Well OW-9



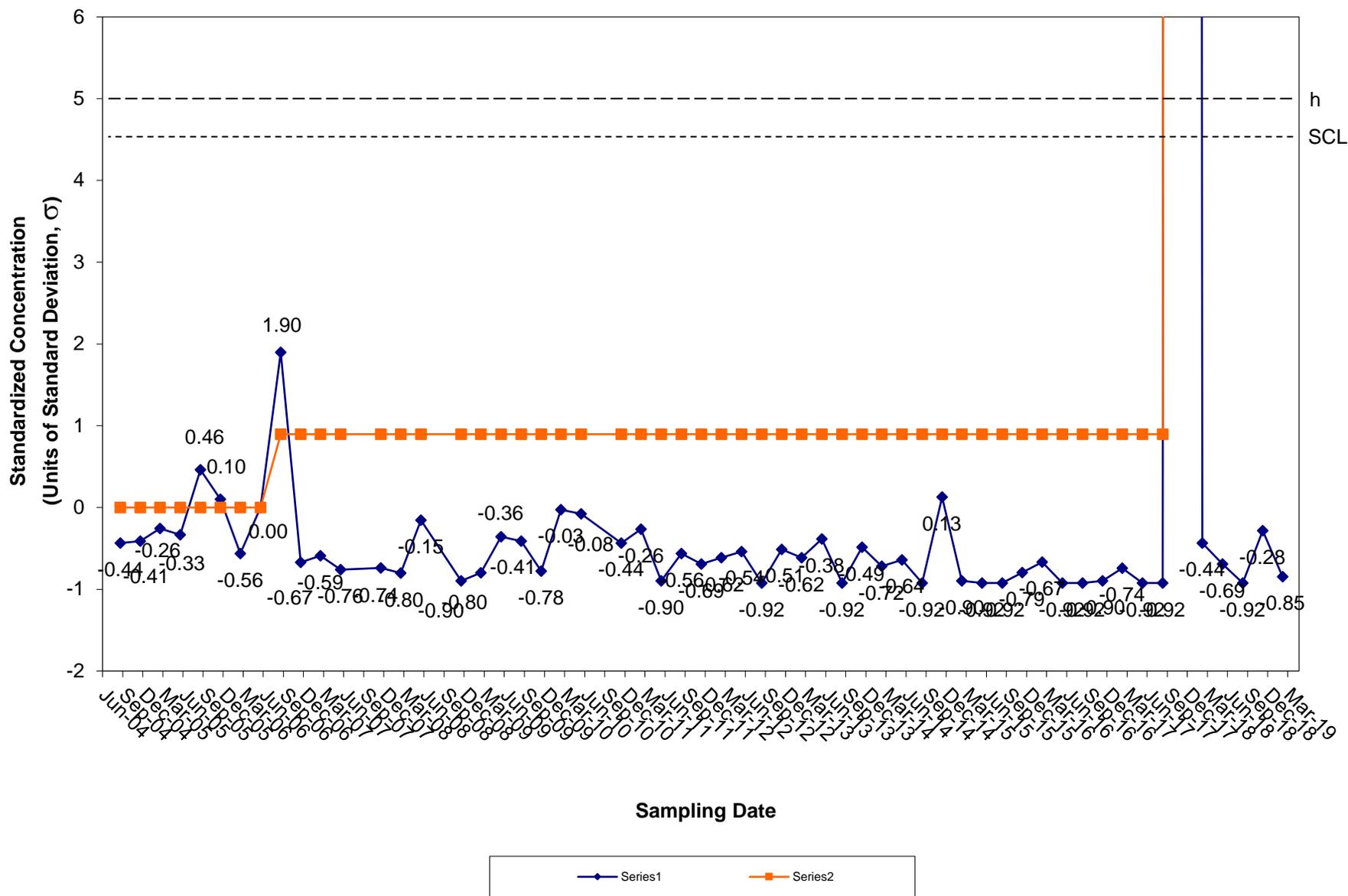
CUSUM Control Chart for Thallium Tiverton Landfill Groundwater Background Well OW-9



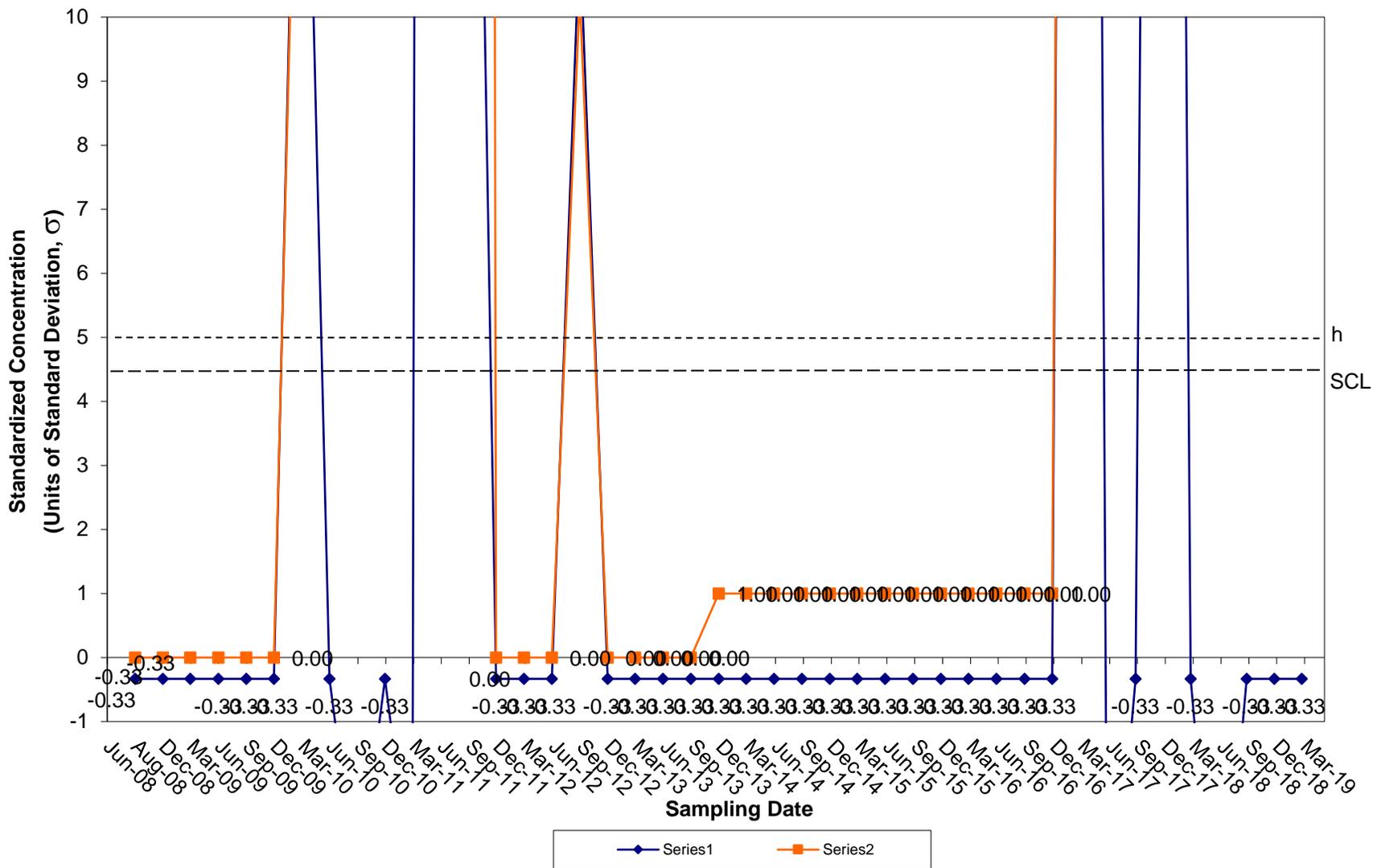
CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Background Well OW-9



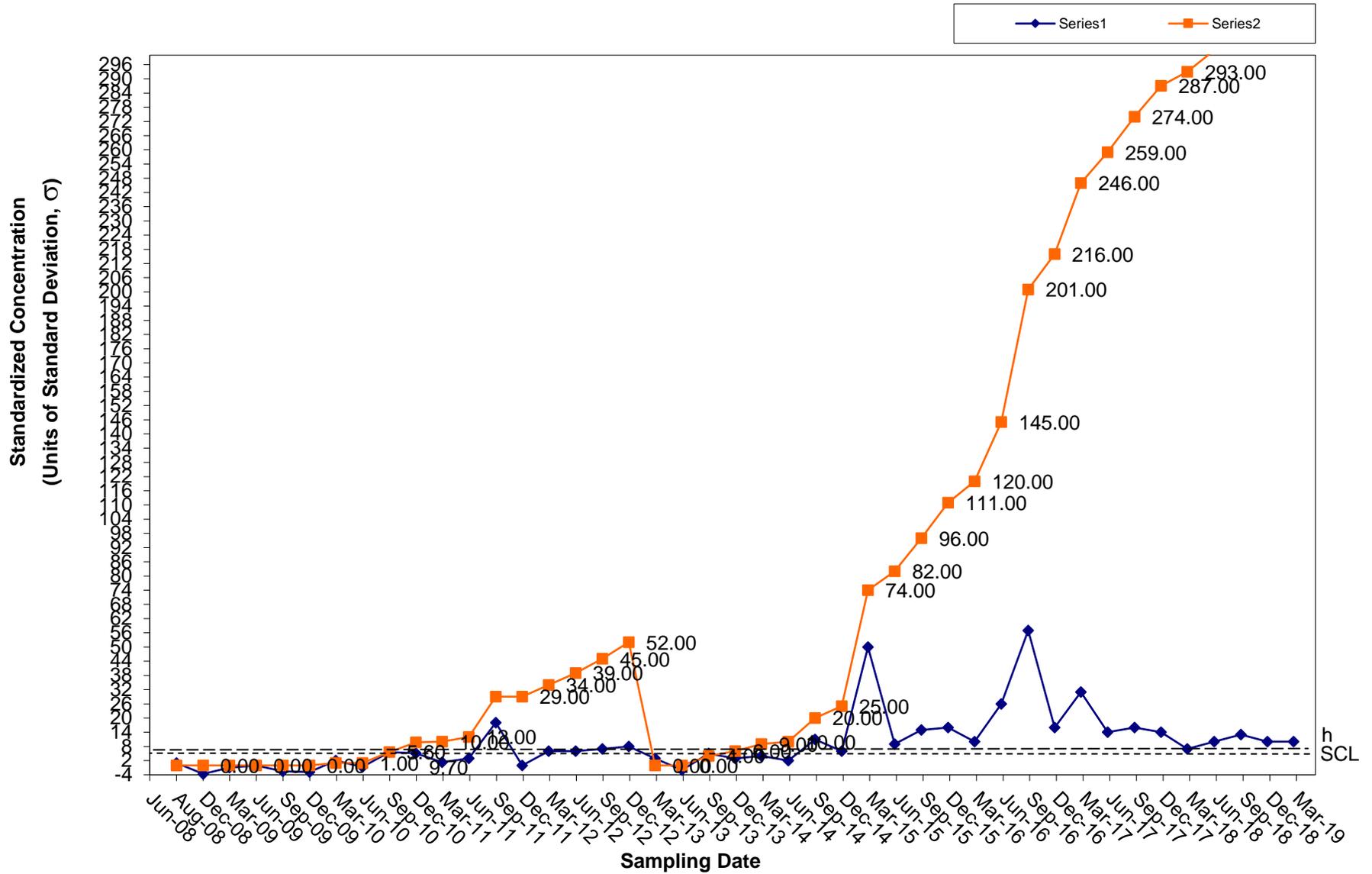
CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Background Well OW-9



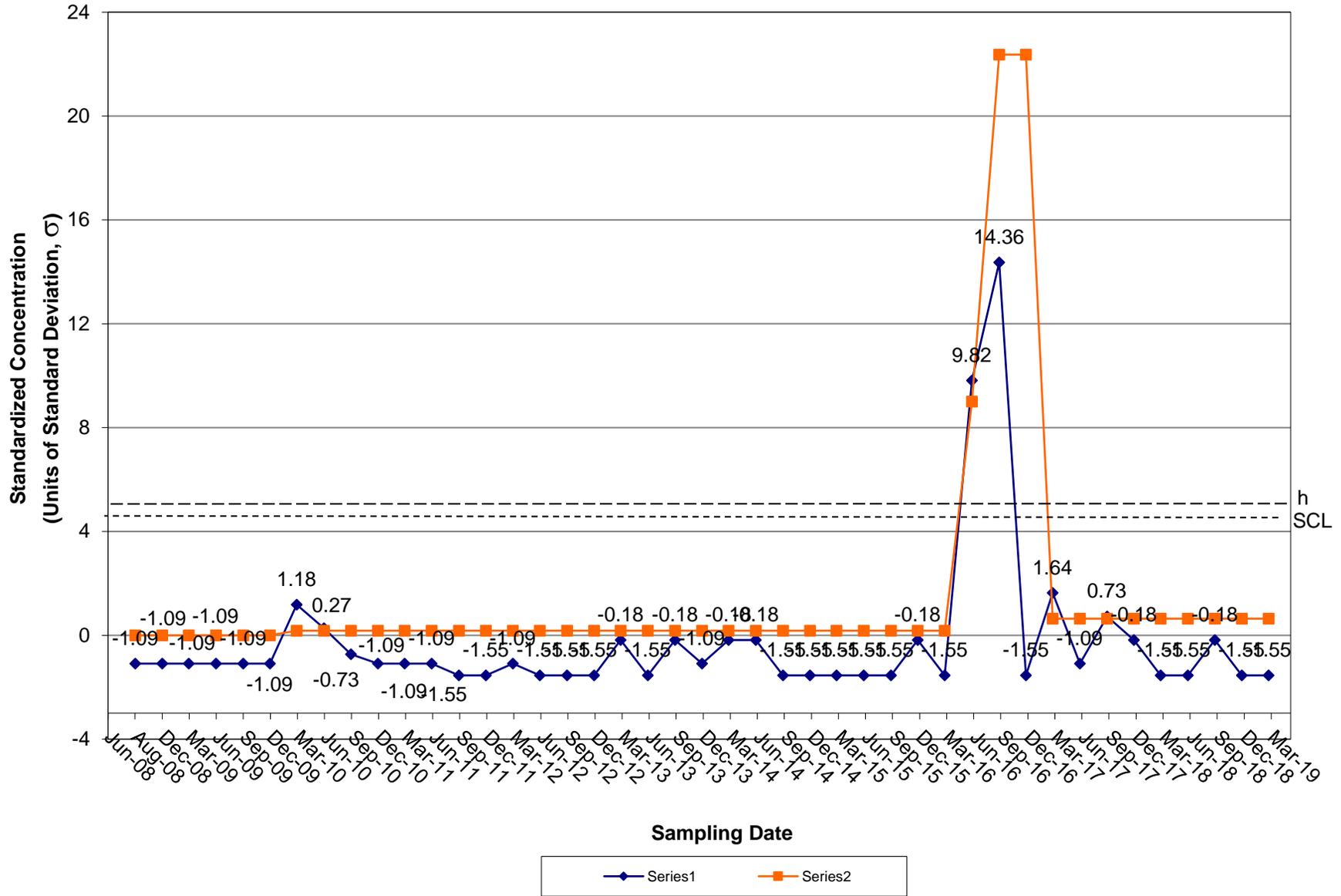
CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-12



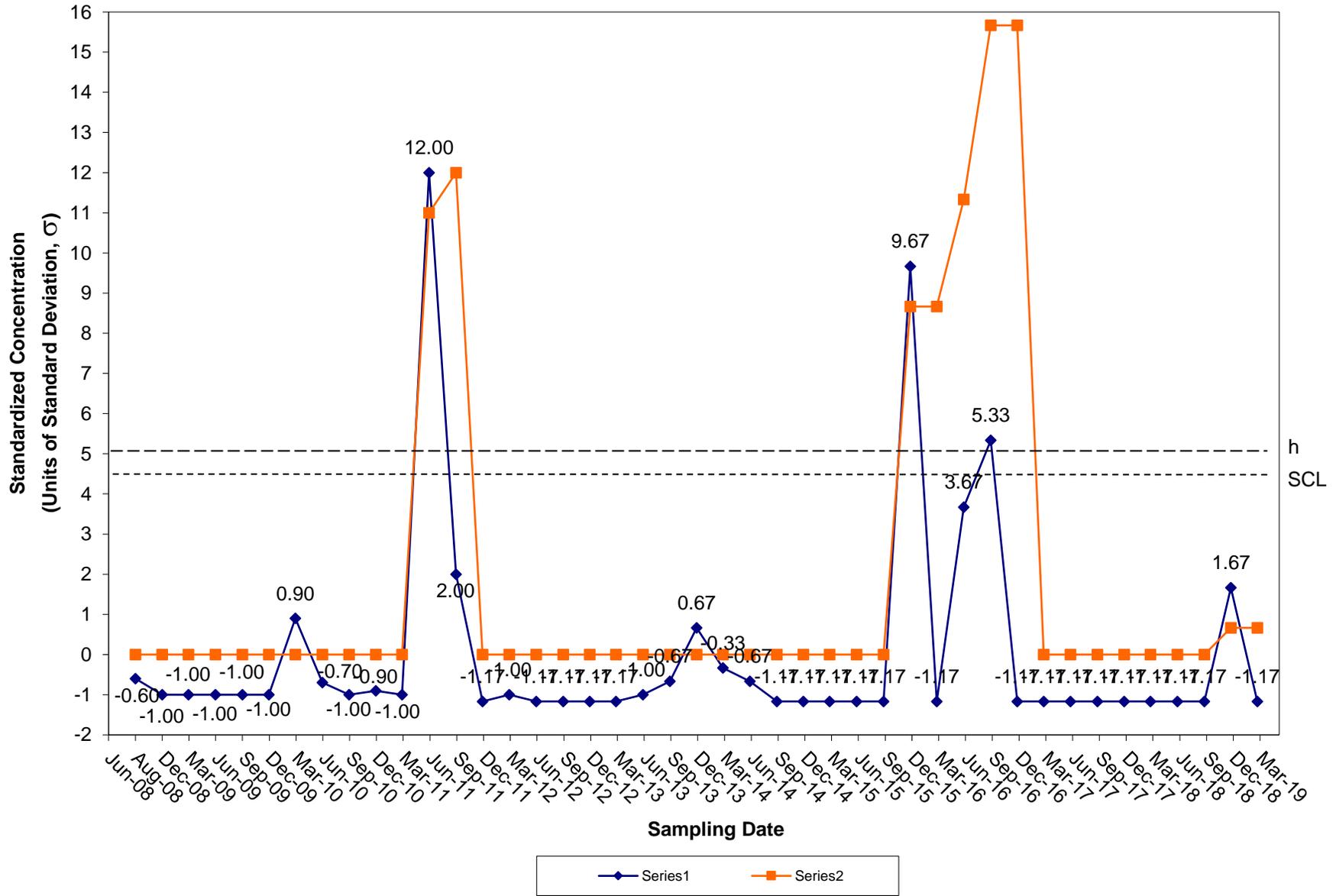
CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-12



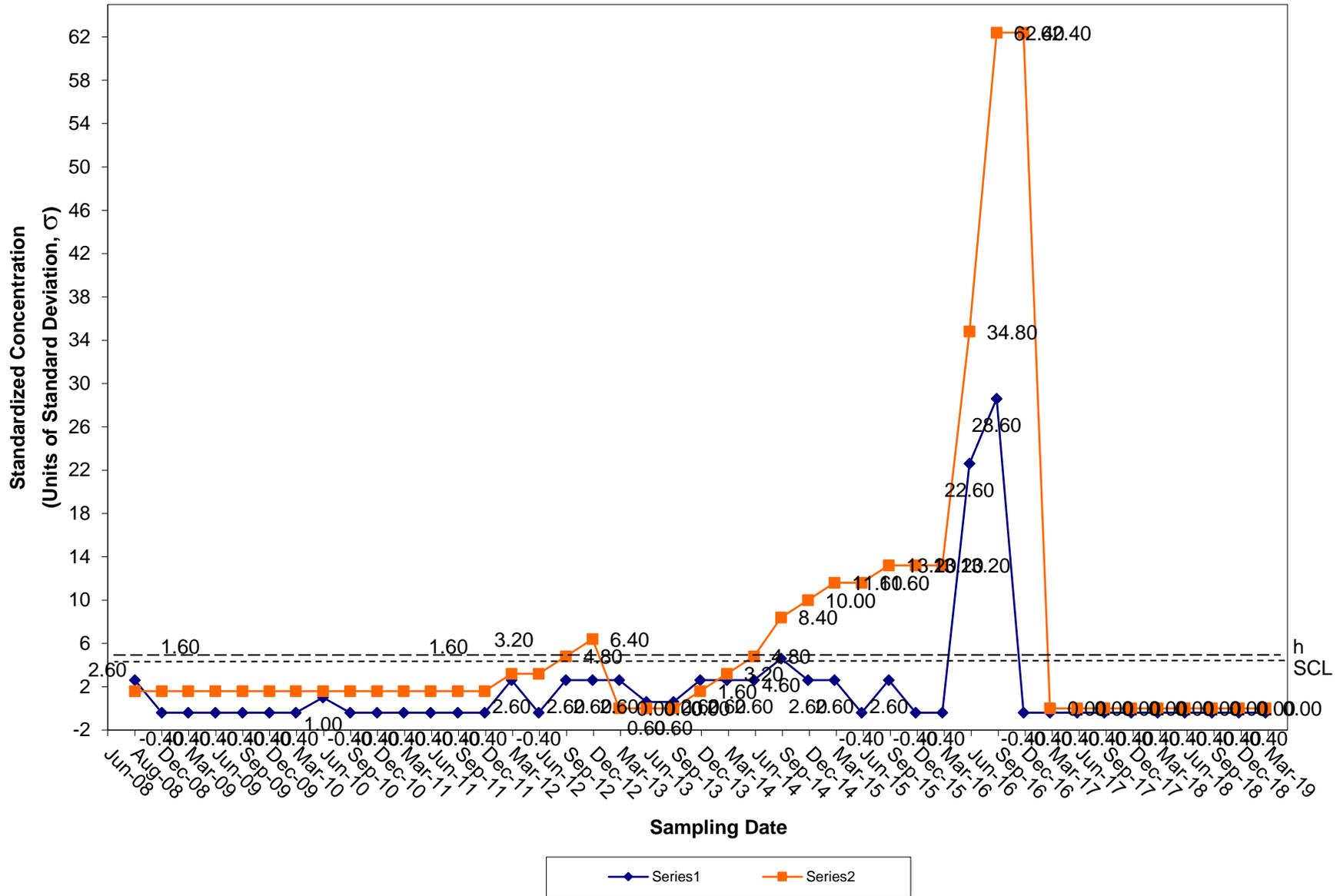
CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Compliance Well OW-12



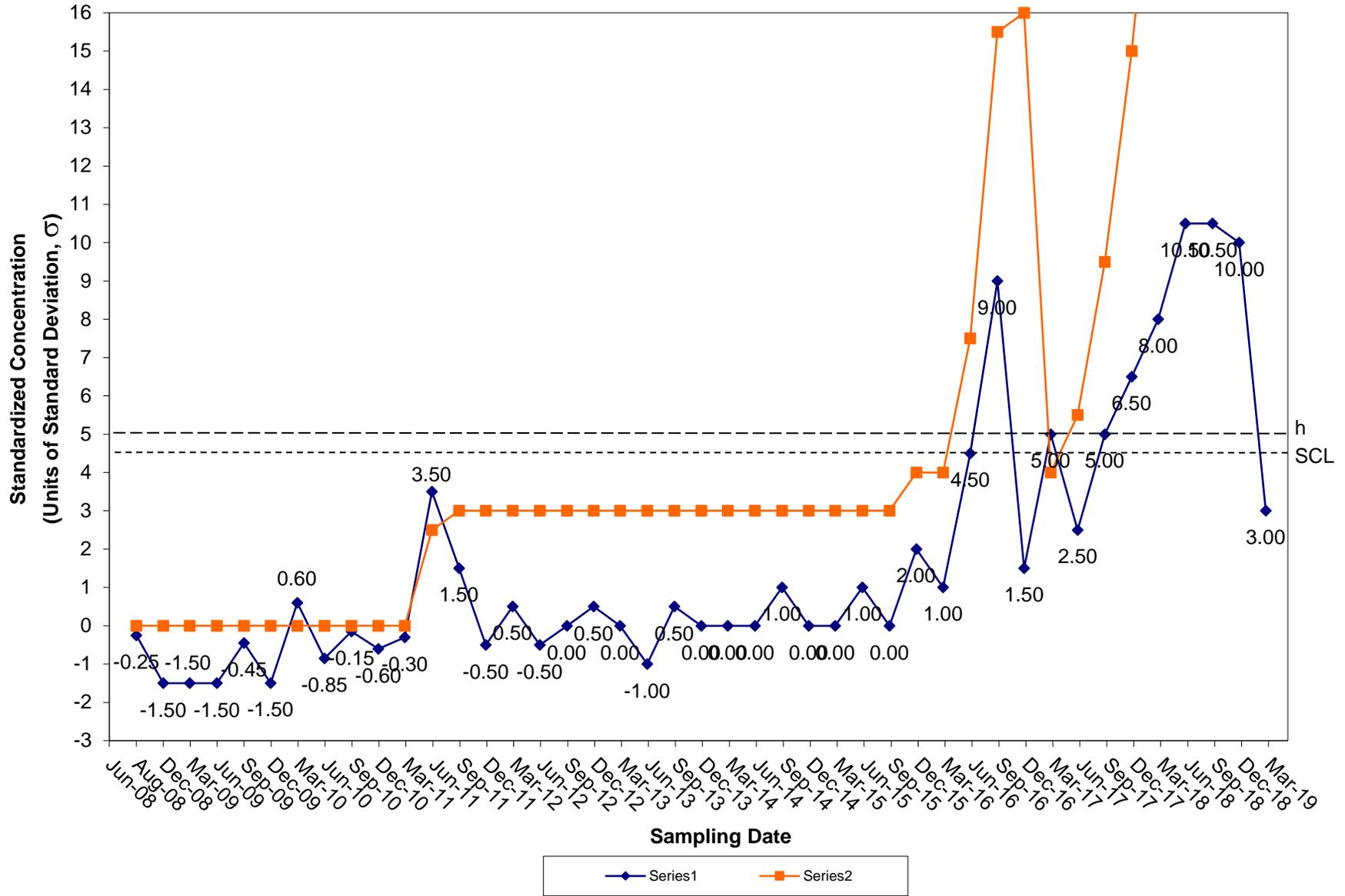
CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-12



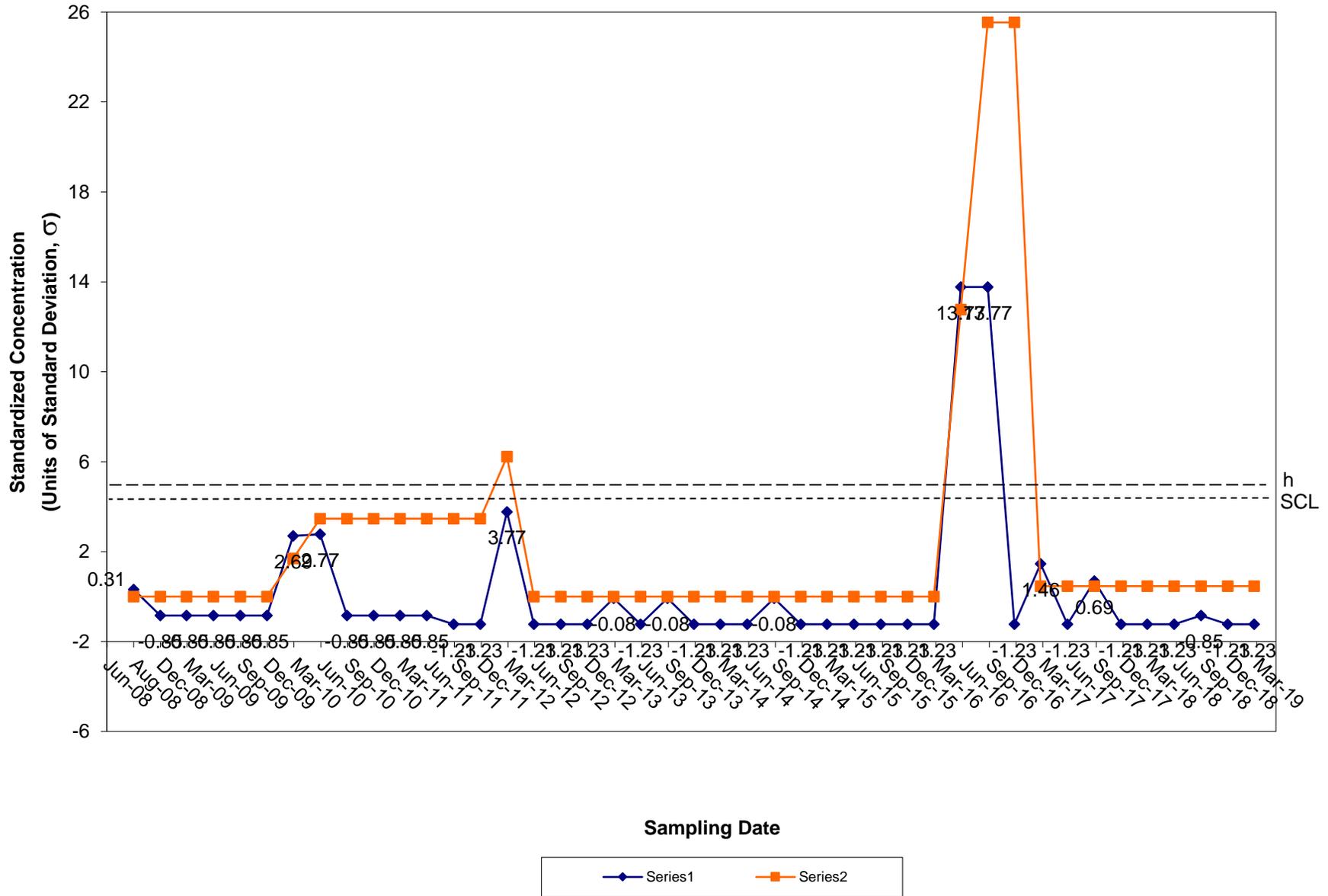
CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-12



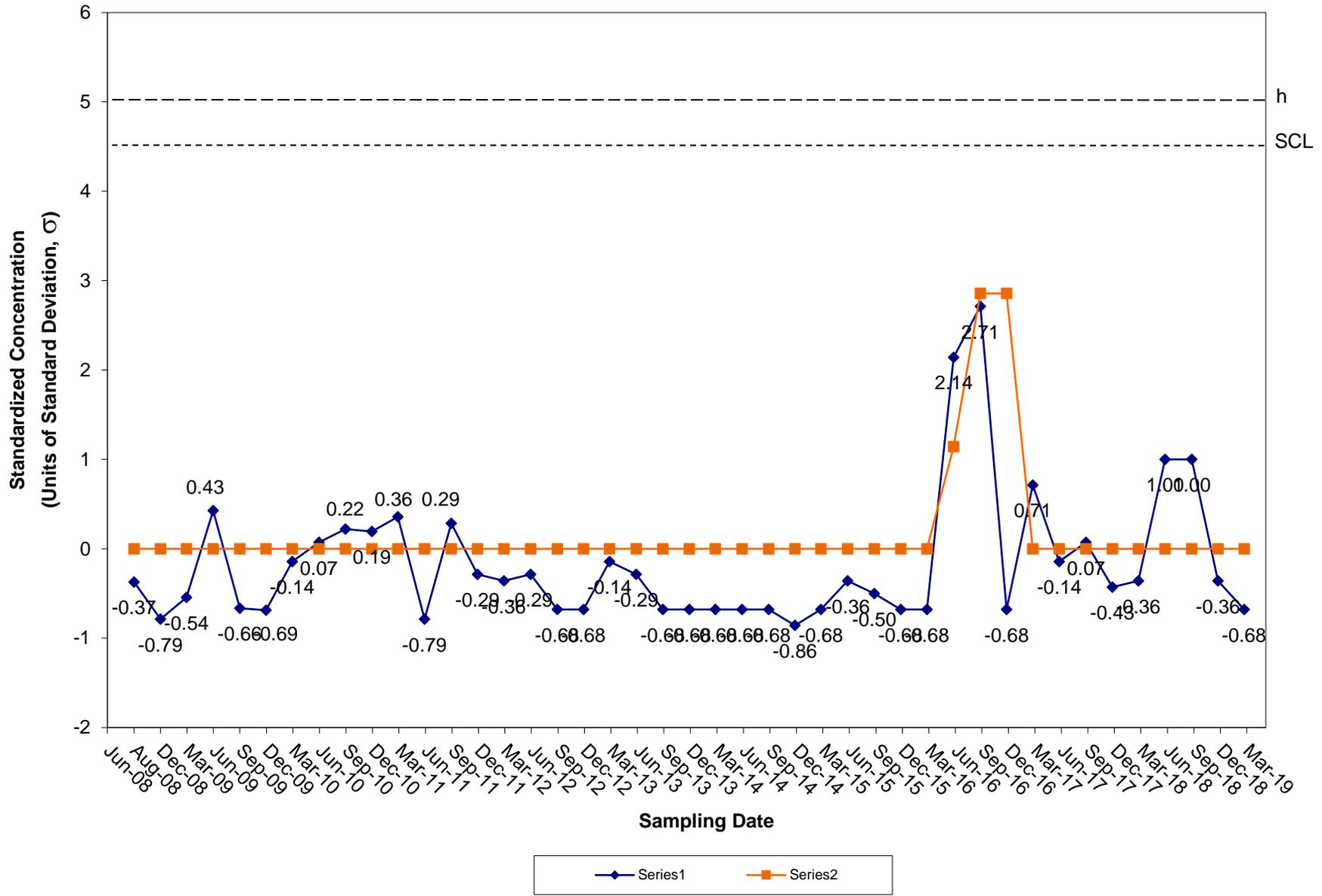
CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-12



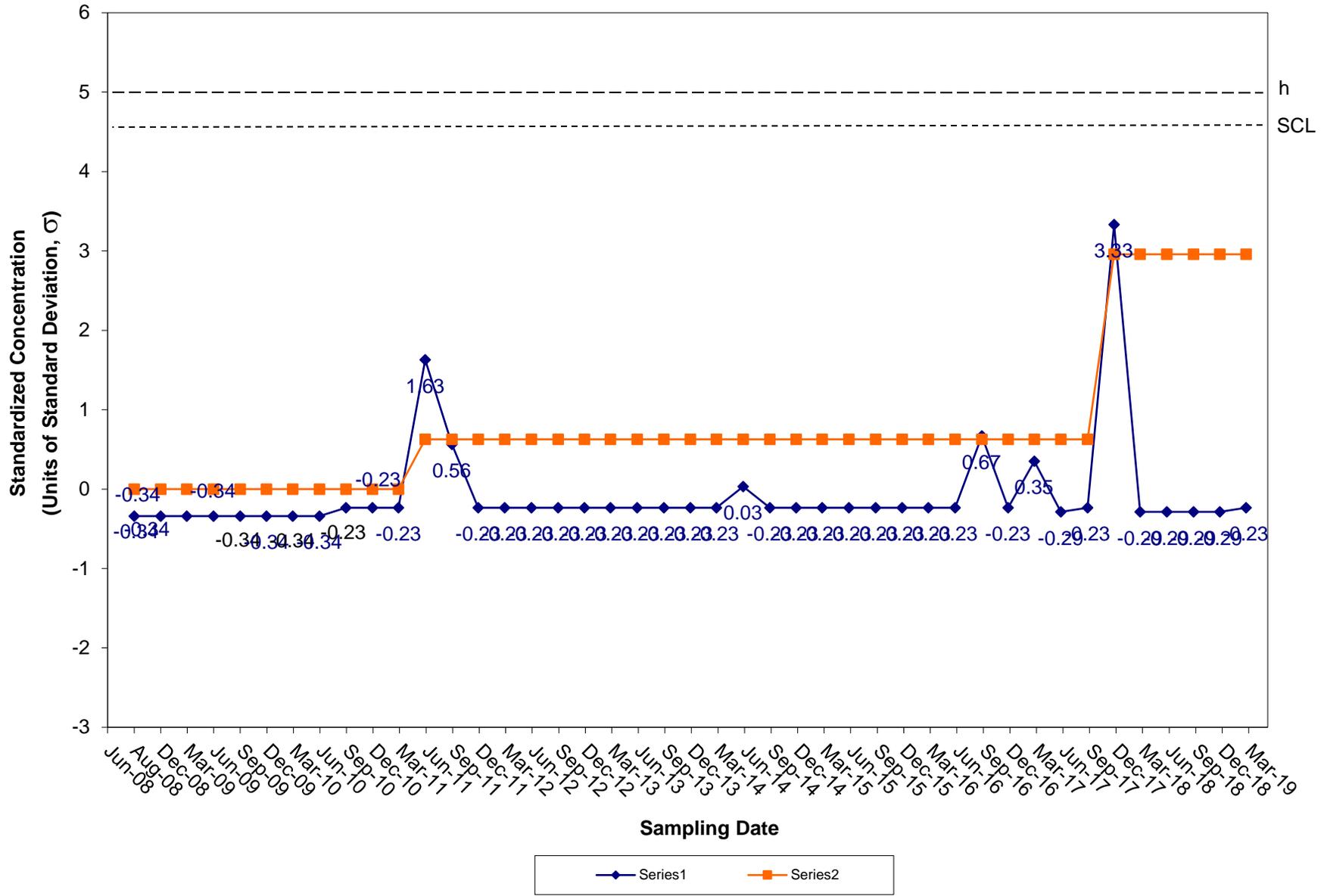
CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-12



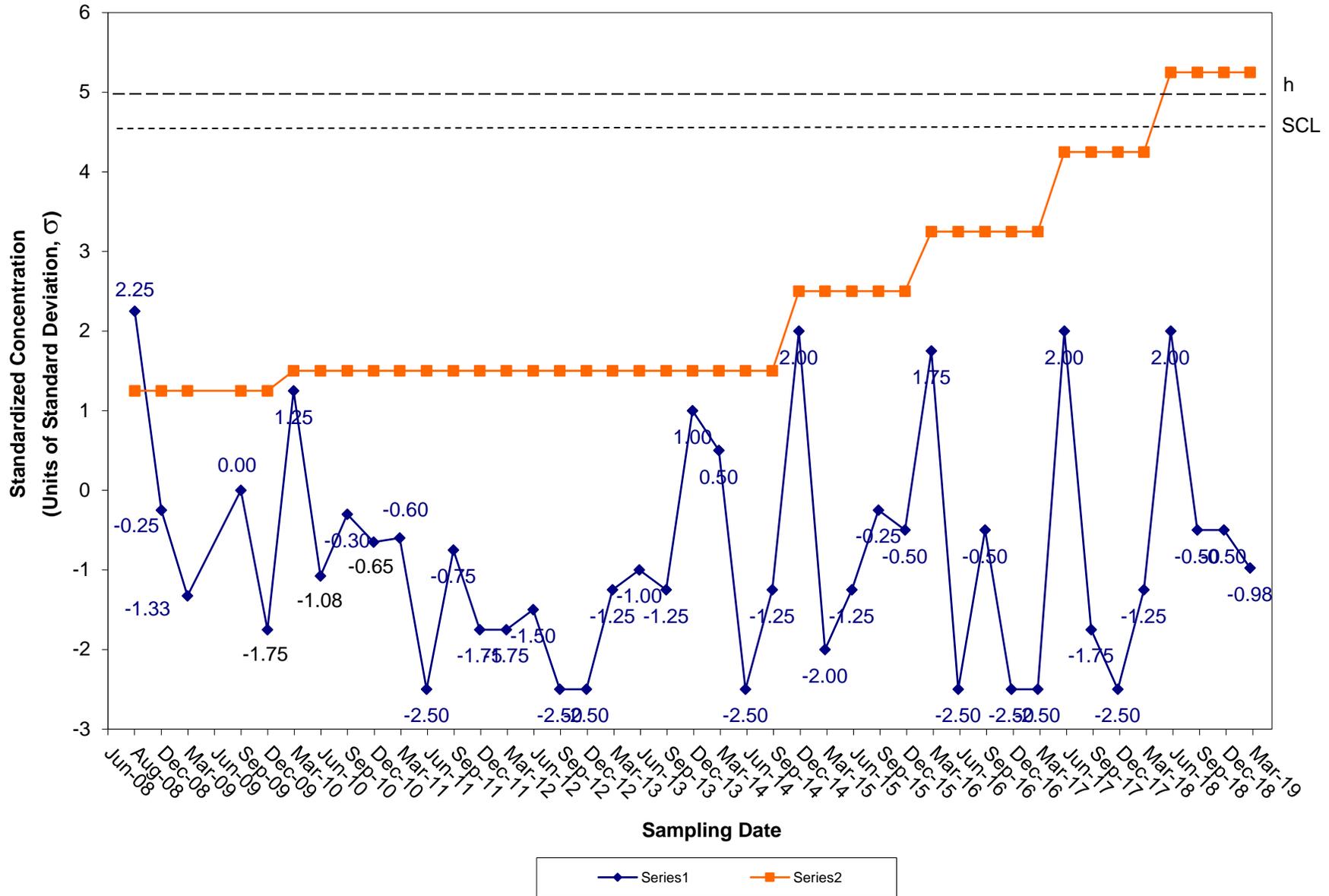
CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-12



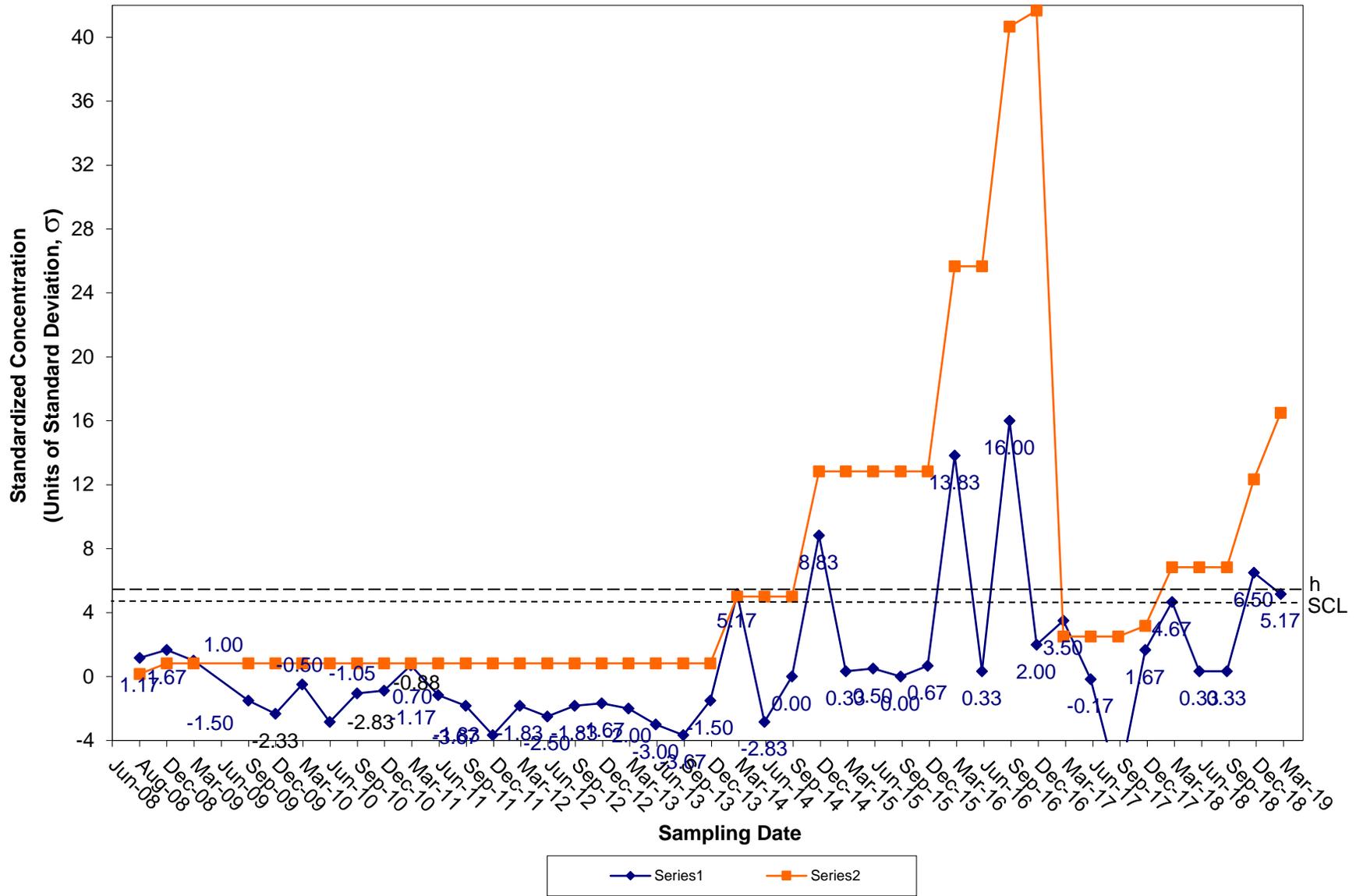
CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-13



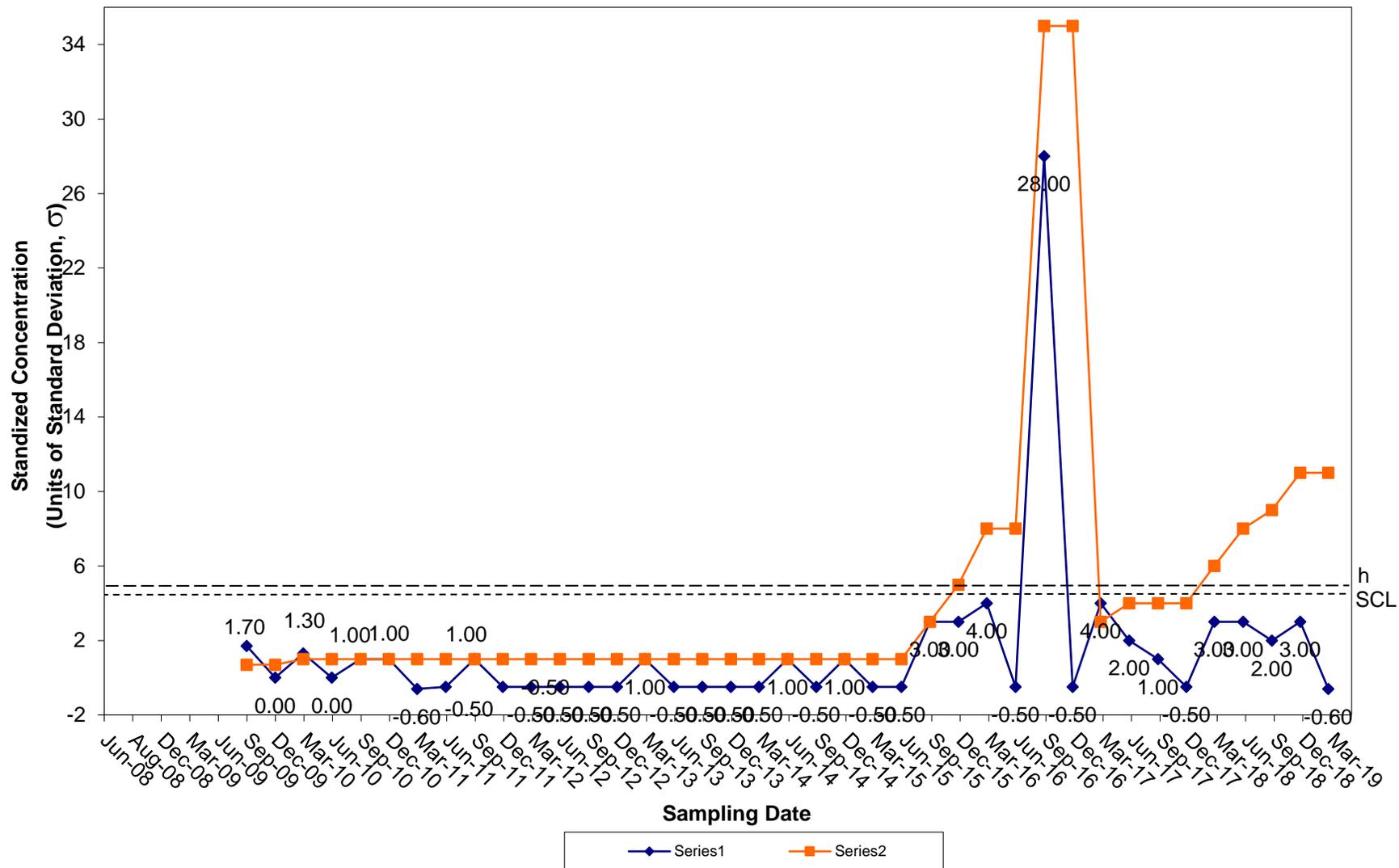
CUSUM Control Chart for Arsenic Tiverton Landfill Groundwater Compliance Well OW-13



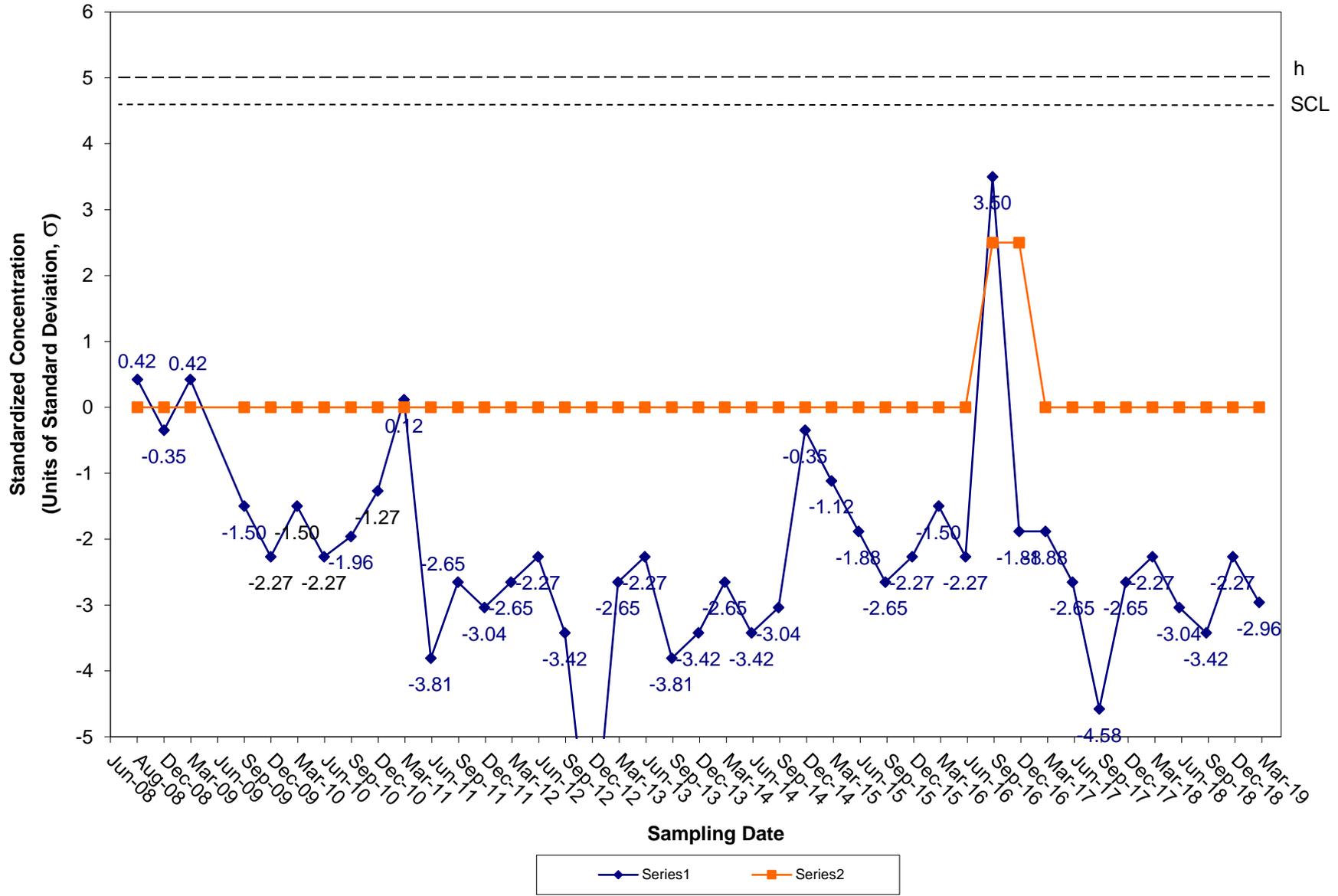
CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-13



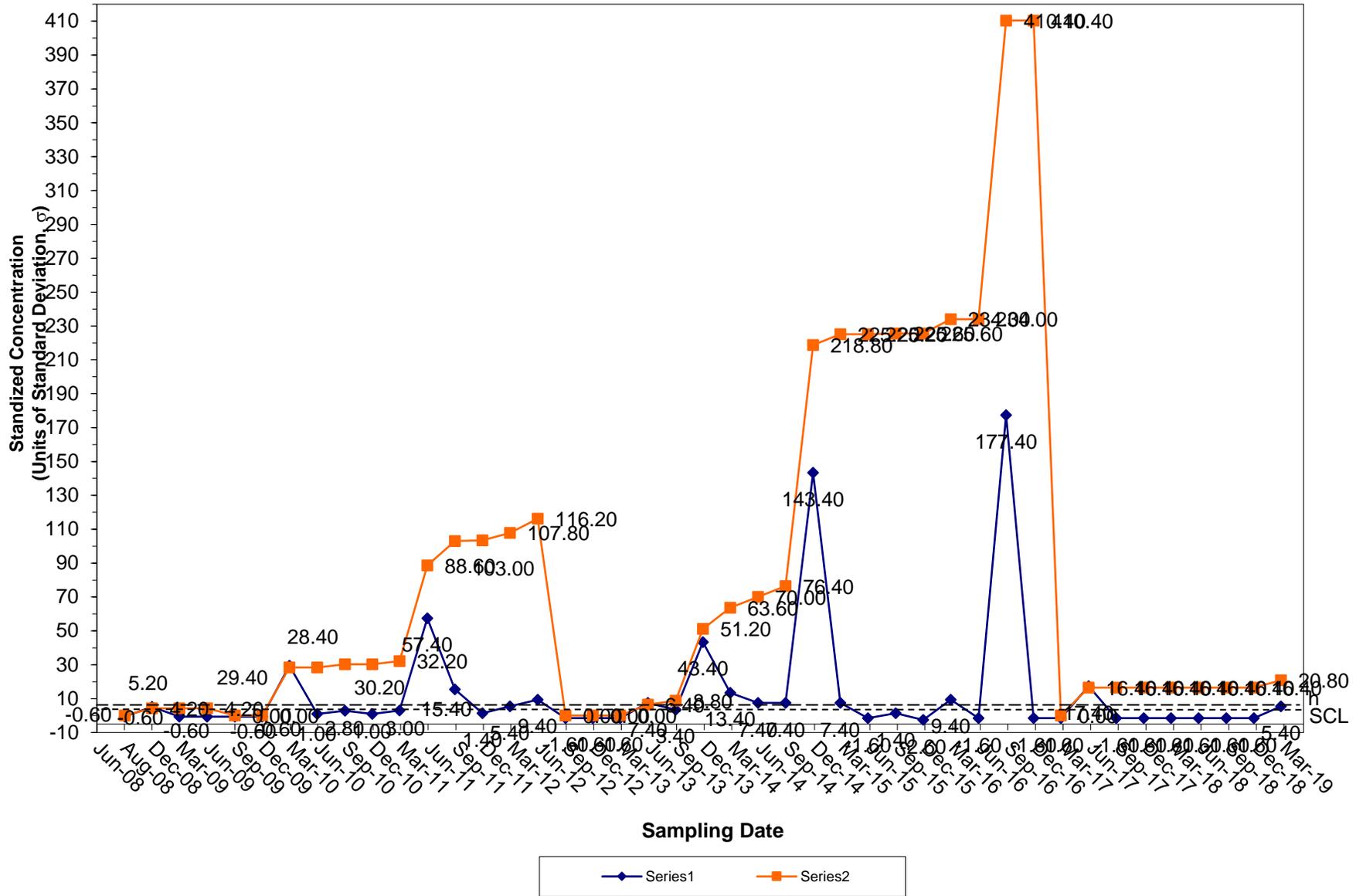
CUSUM Control Chart for Cadmium Tiverton Landfill Groundwater Compliance Well OW-13



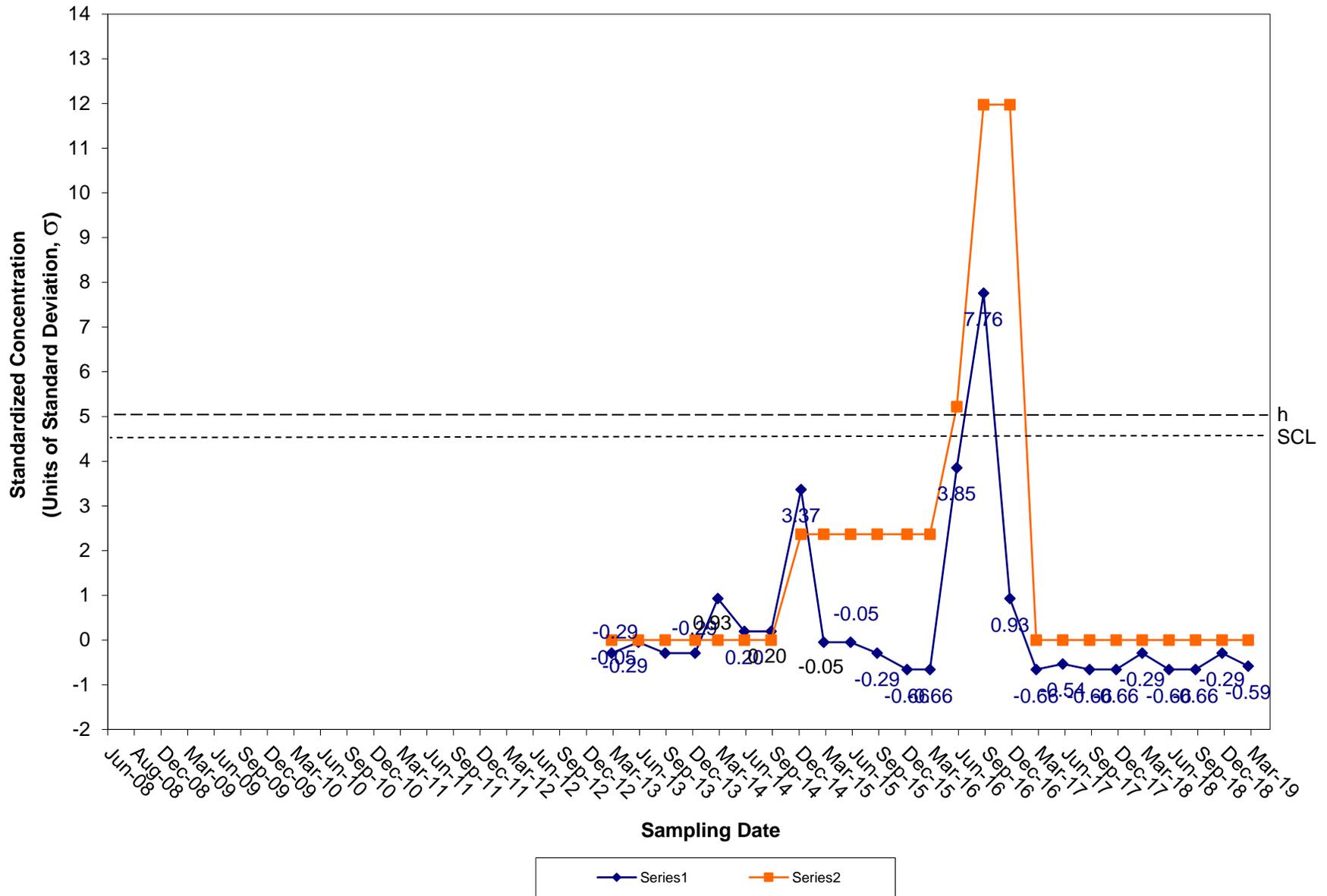
CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Compliance Well OW-13



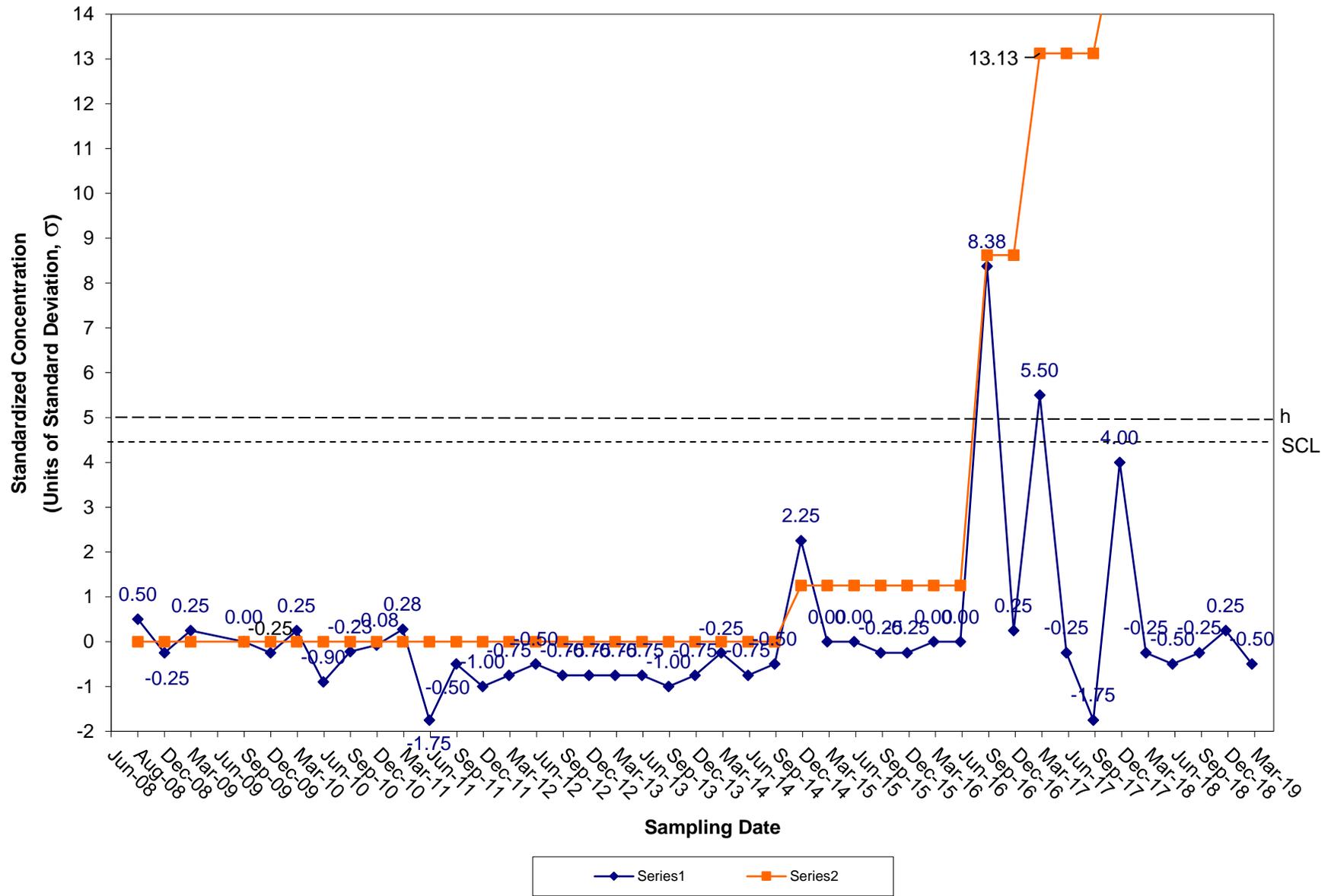
CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-13



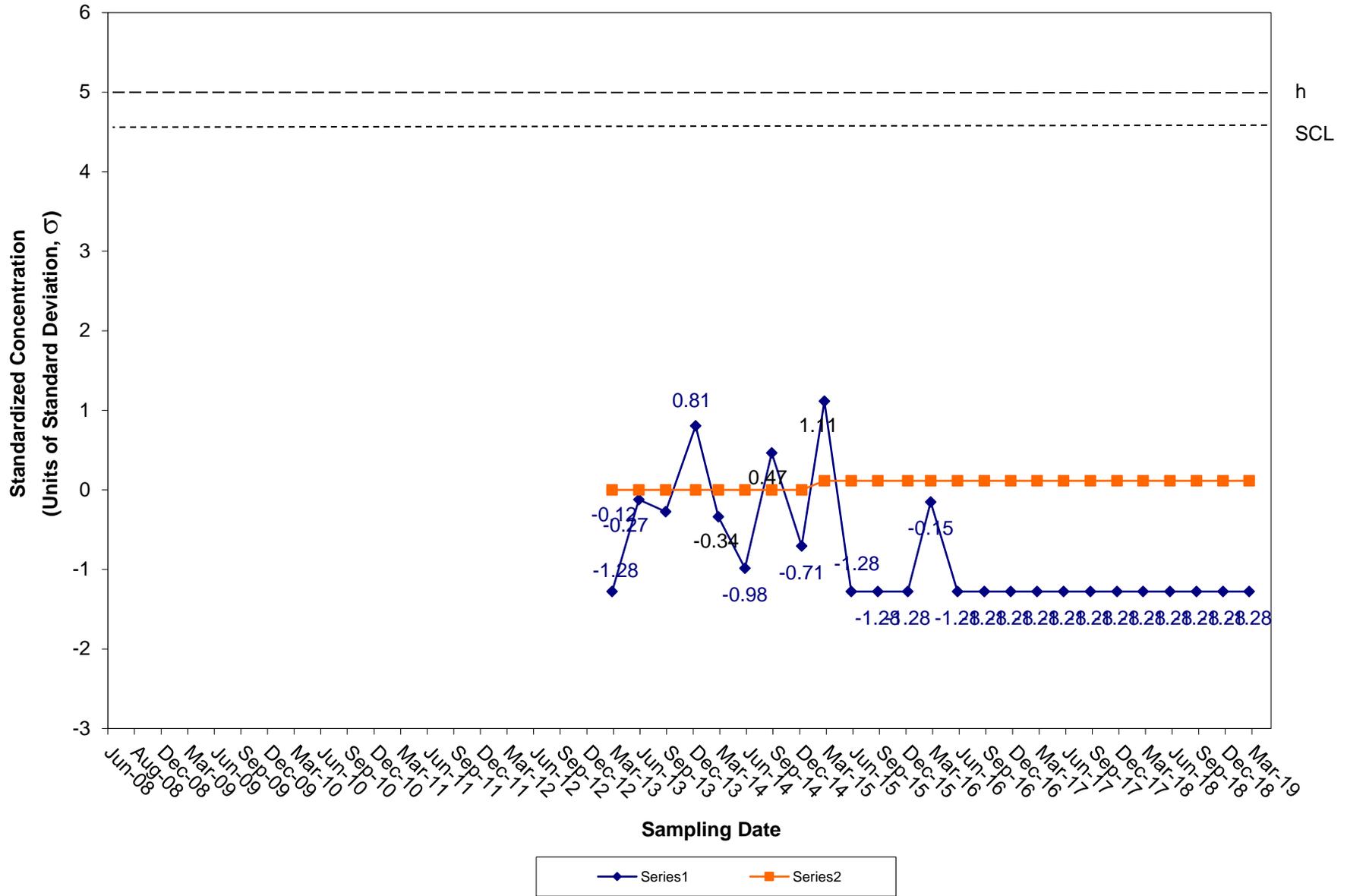
CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-13



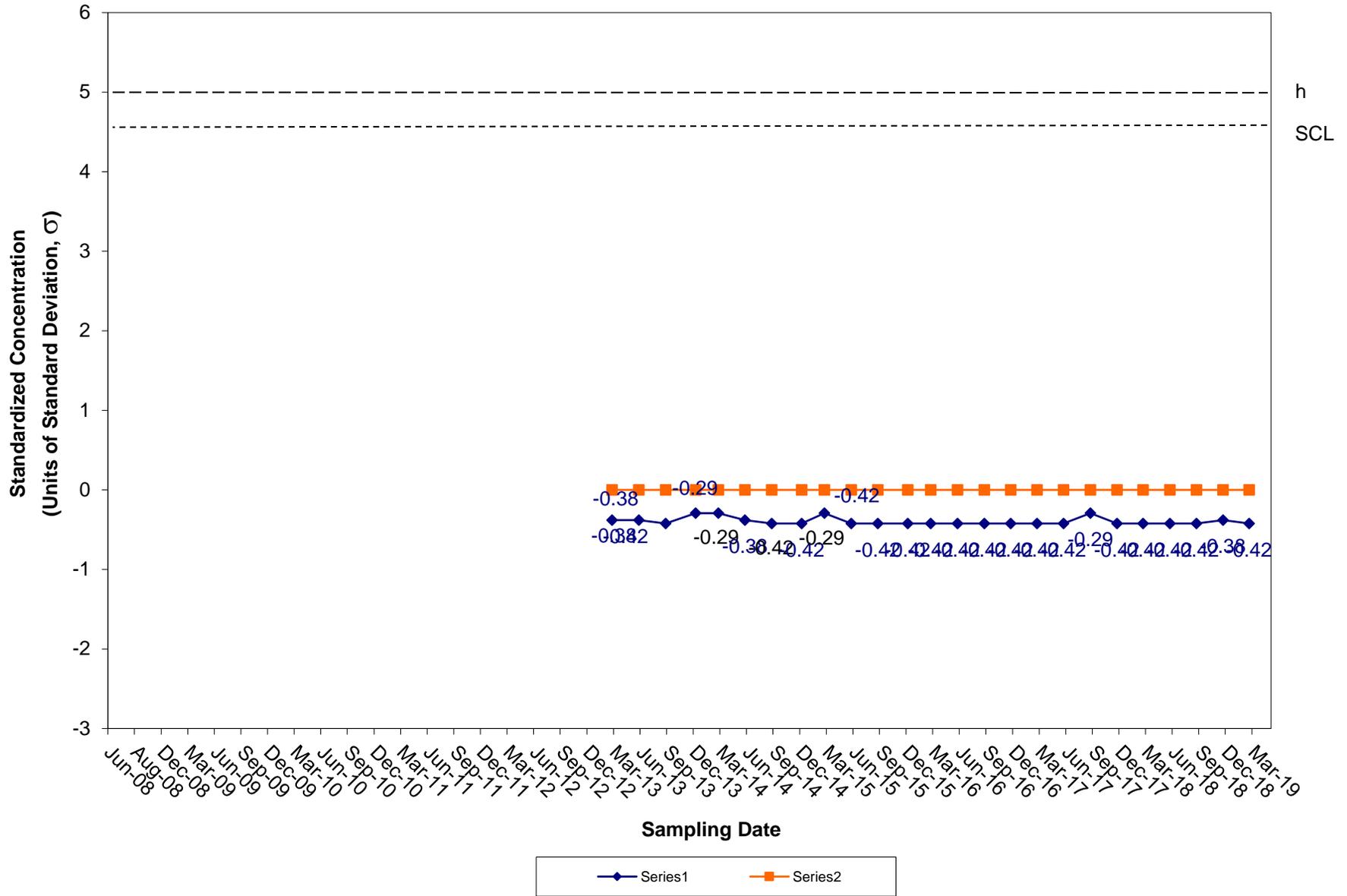
CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-13



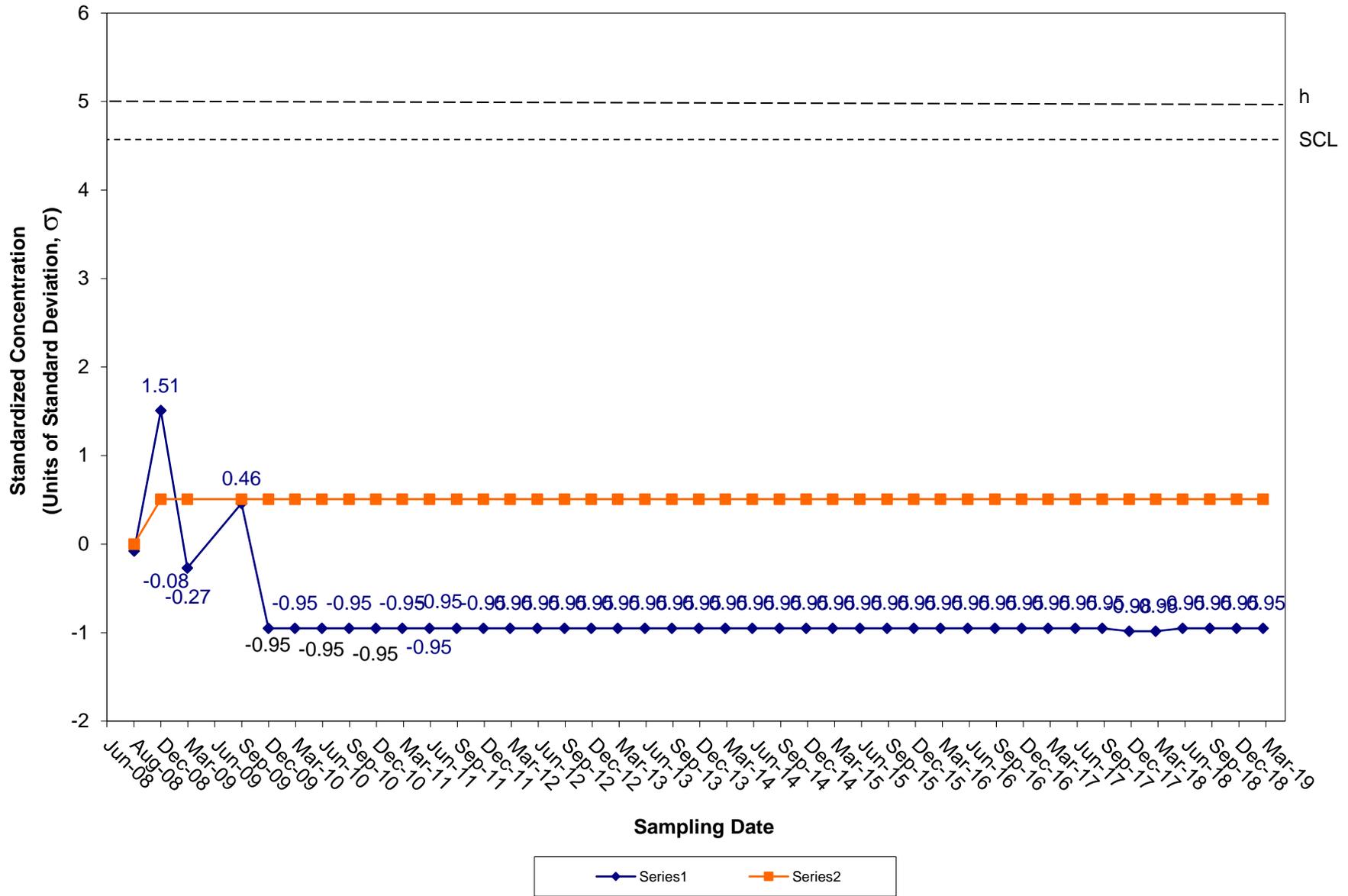
CUSUM Control Chart for Selenium Tiverton Landfill Groundwater Compliance Well OW-13



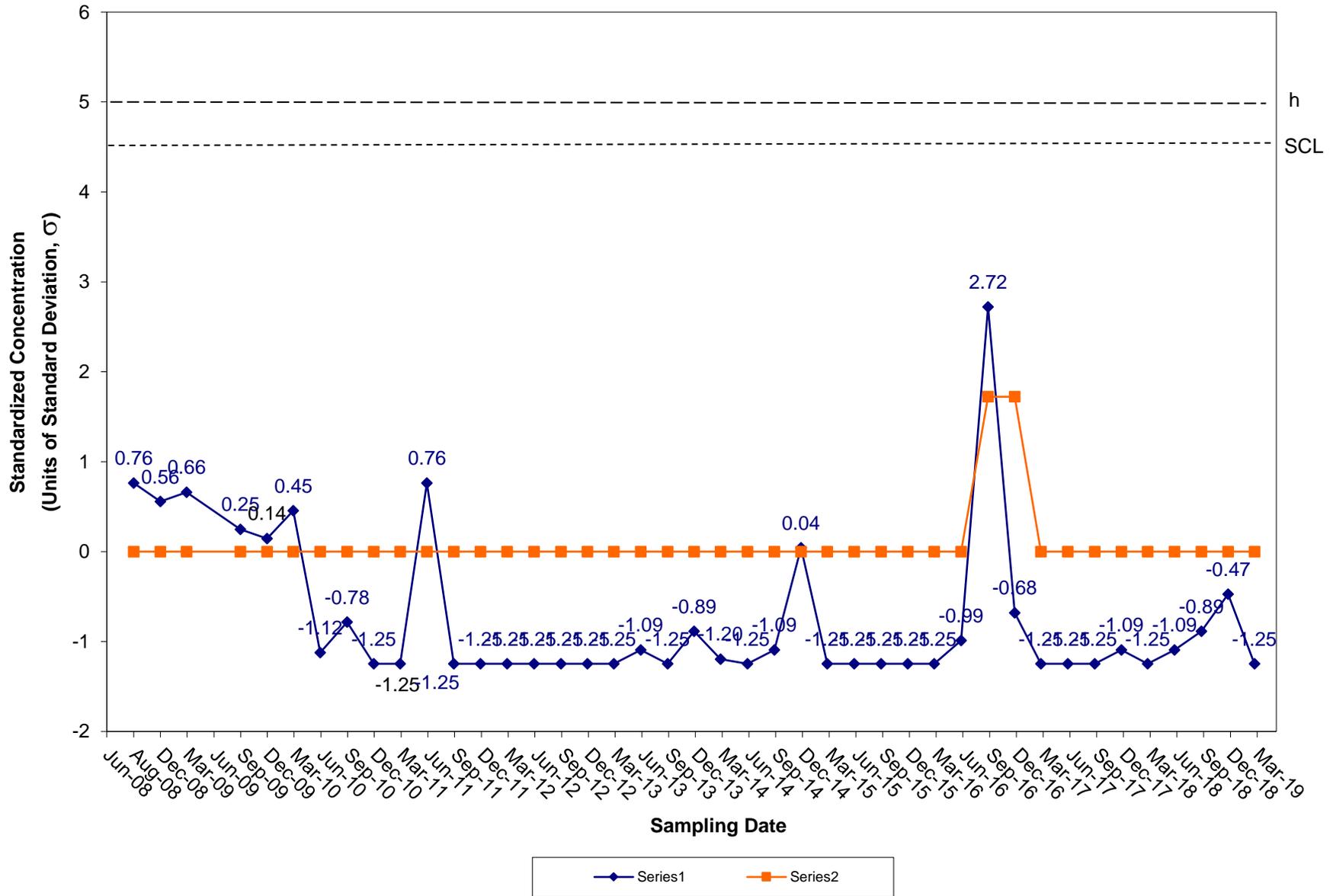
CUSUM Control Chart for Silver Tiverton Landfill Groundwater Compliance Well OW-13



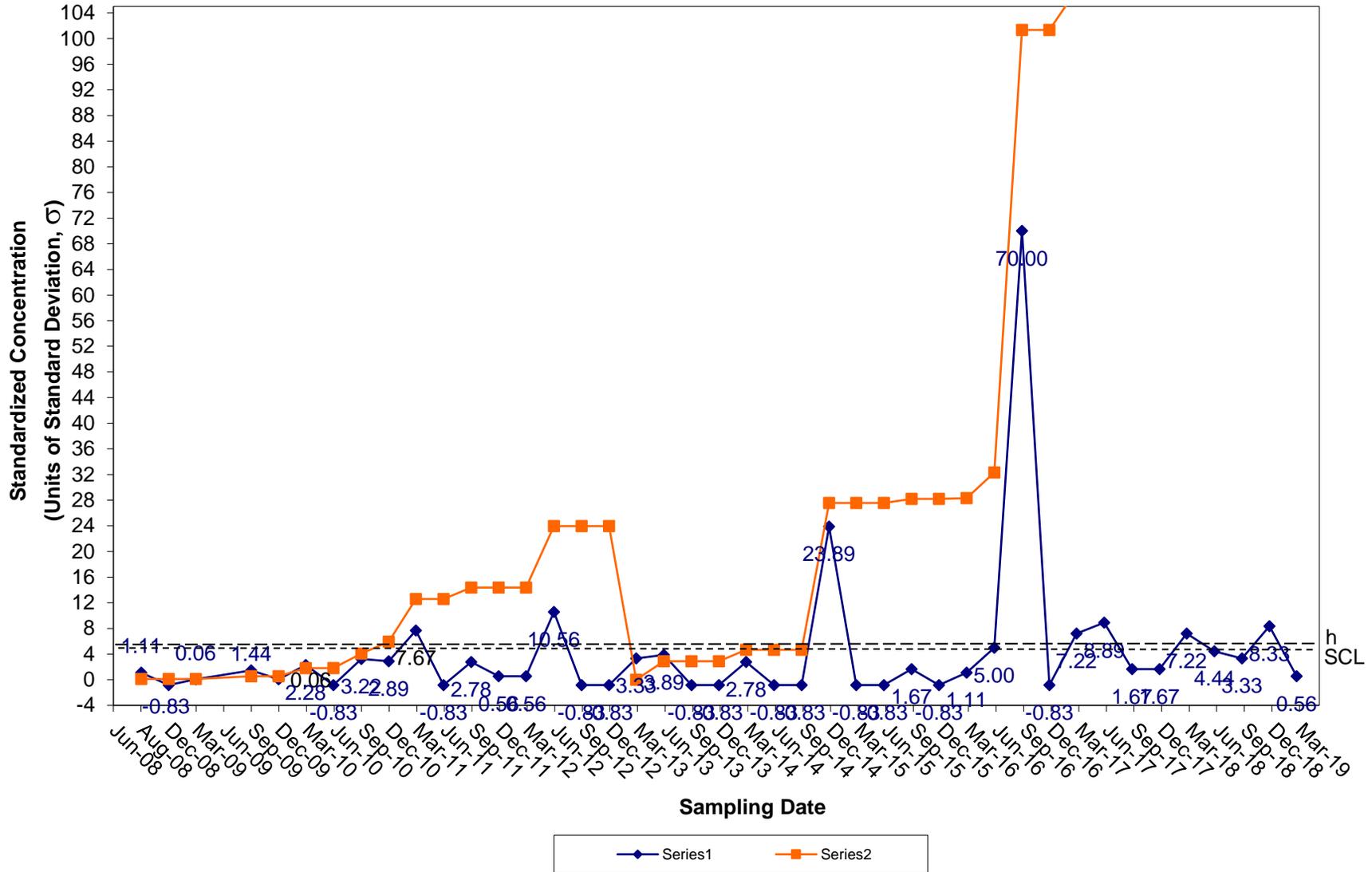
CUSUM Control Chart for Thallium Tiverton Landfill Groundwater Compliance Well OW-13



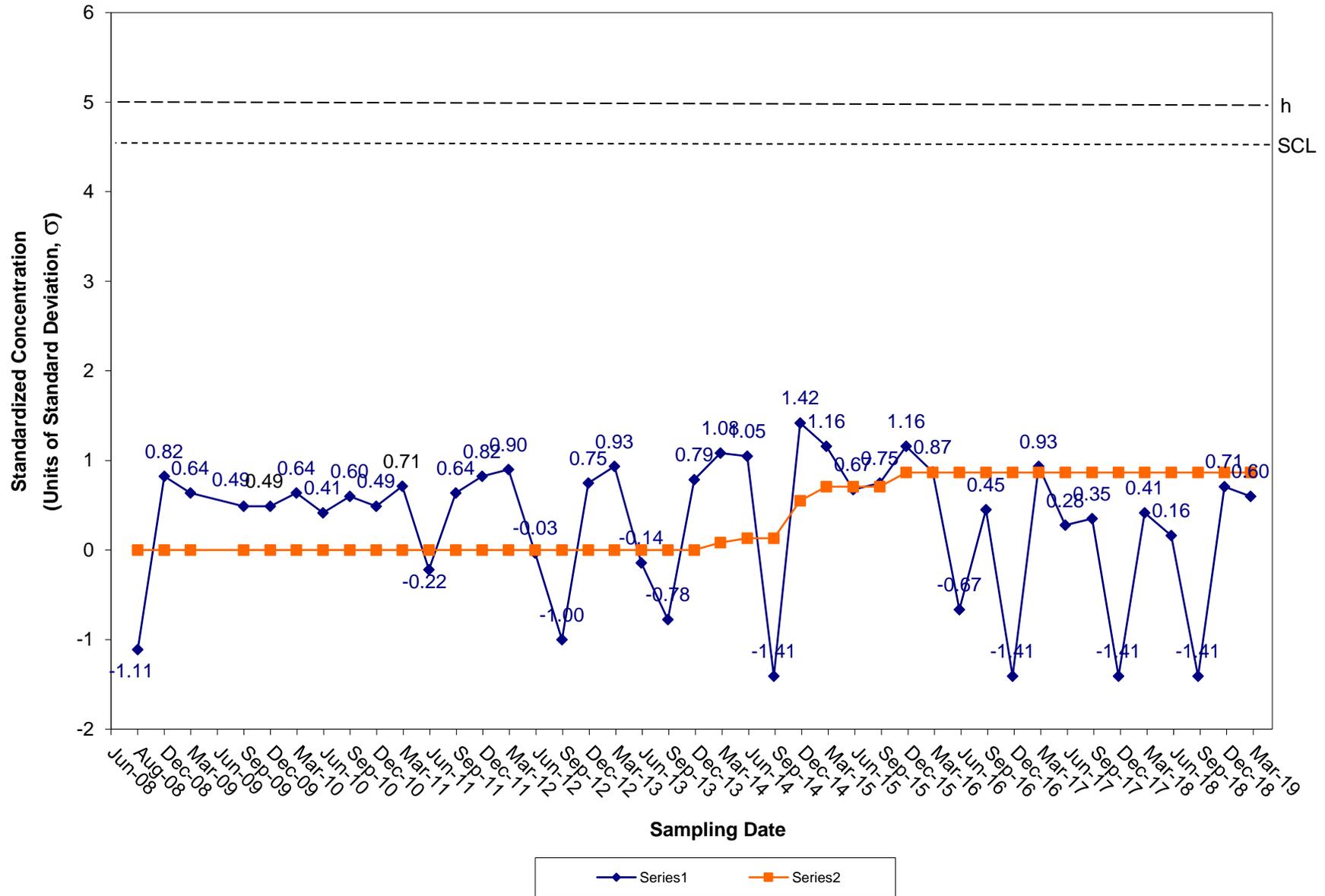
CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-13



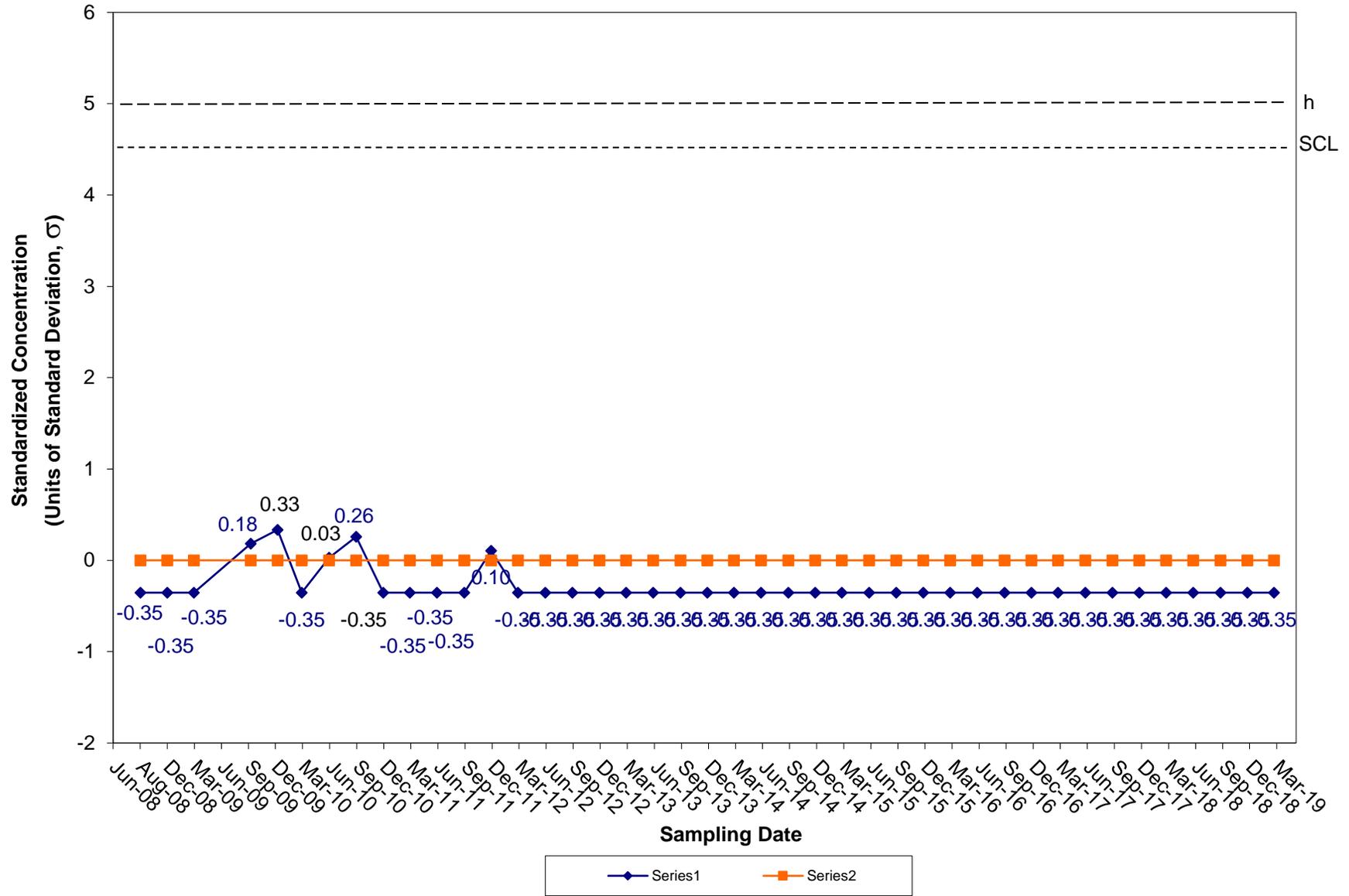
CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-13



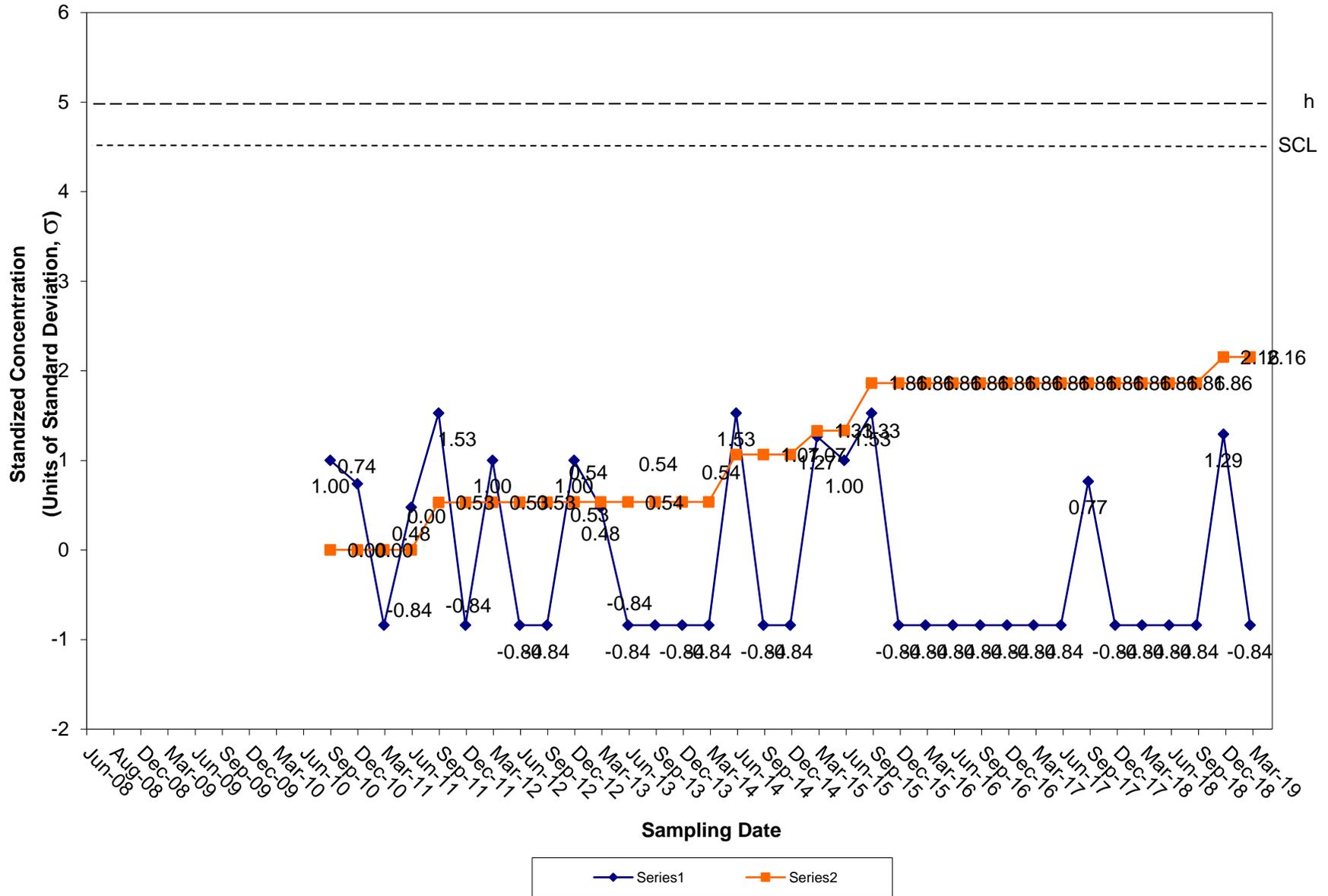
CUSUM Control Chart for Chlorobenzene Tiverton Landfill Groundwater Compliance Well OW-13



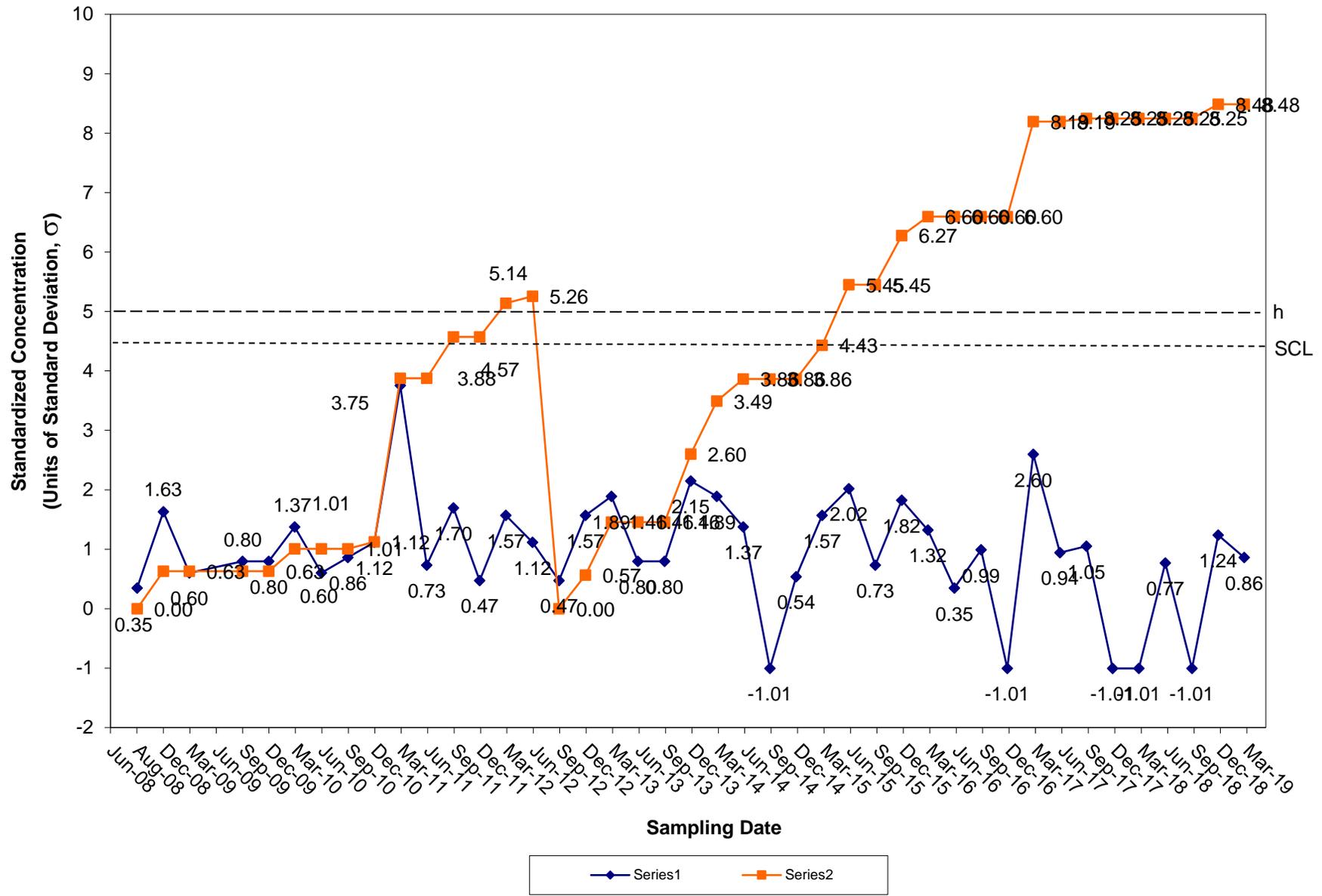
CUSUM Control Chart for Chloroethane Tiverton Landfill Groundwater Compliance Well OW-13



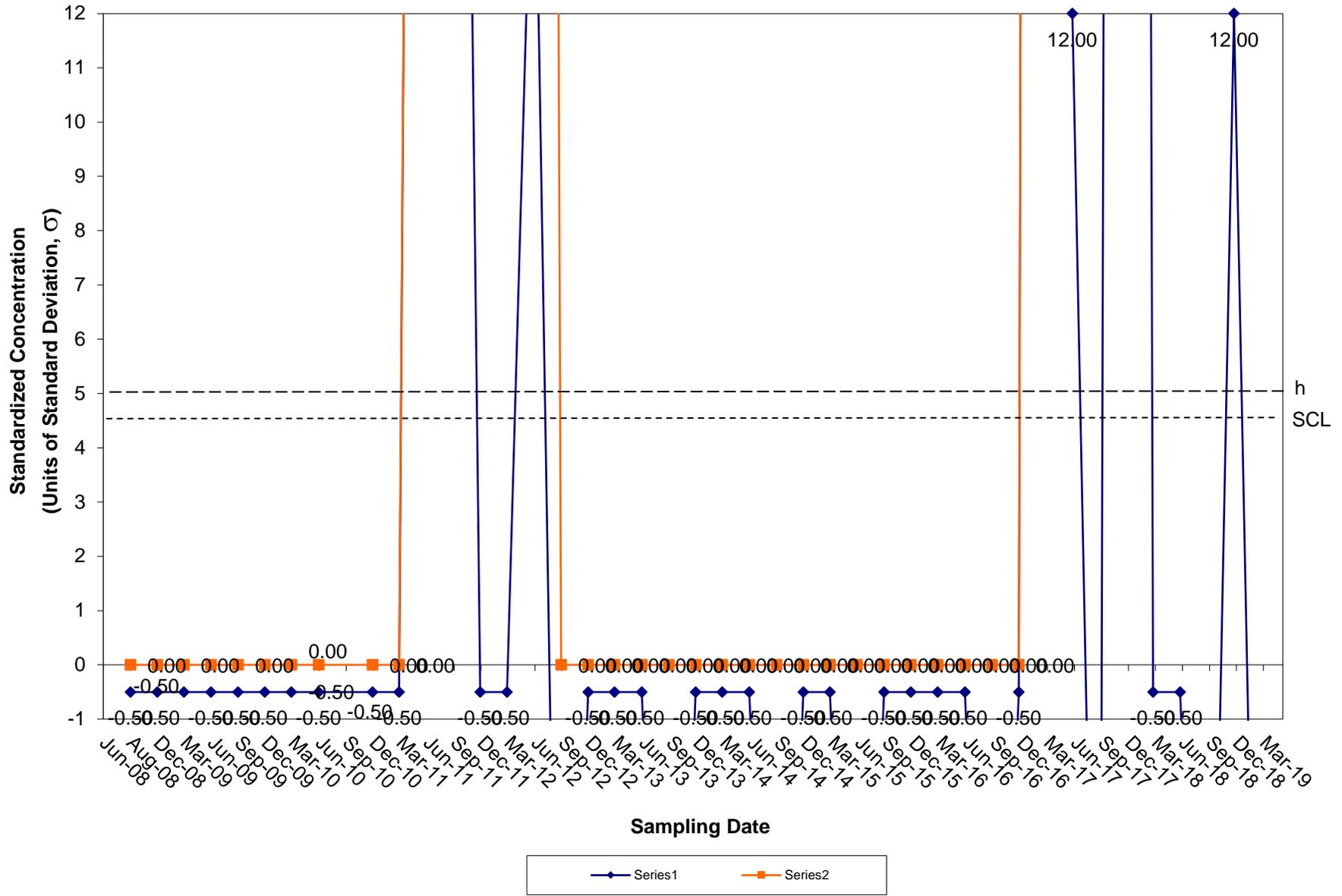
CUSUM Control Chart for 1,4-Dichlorobenzene - Adjusted Baseline Tiverton Landfill Groundwater Compliance Well OW-13



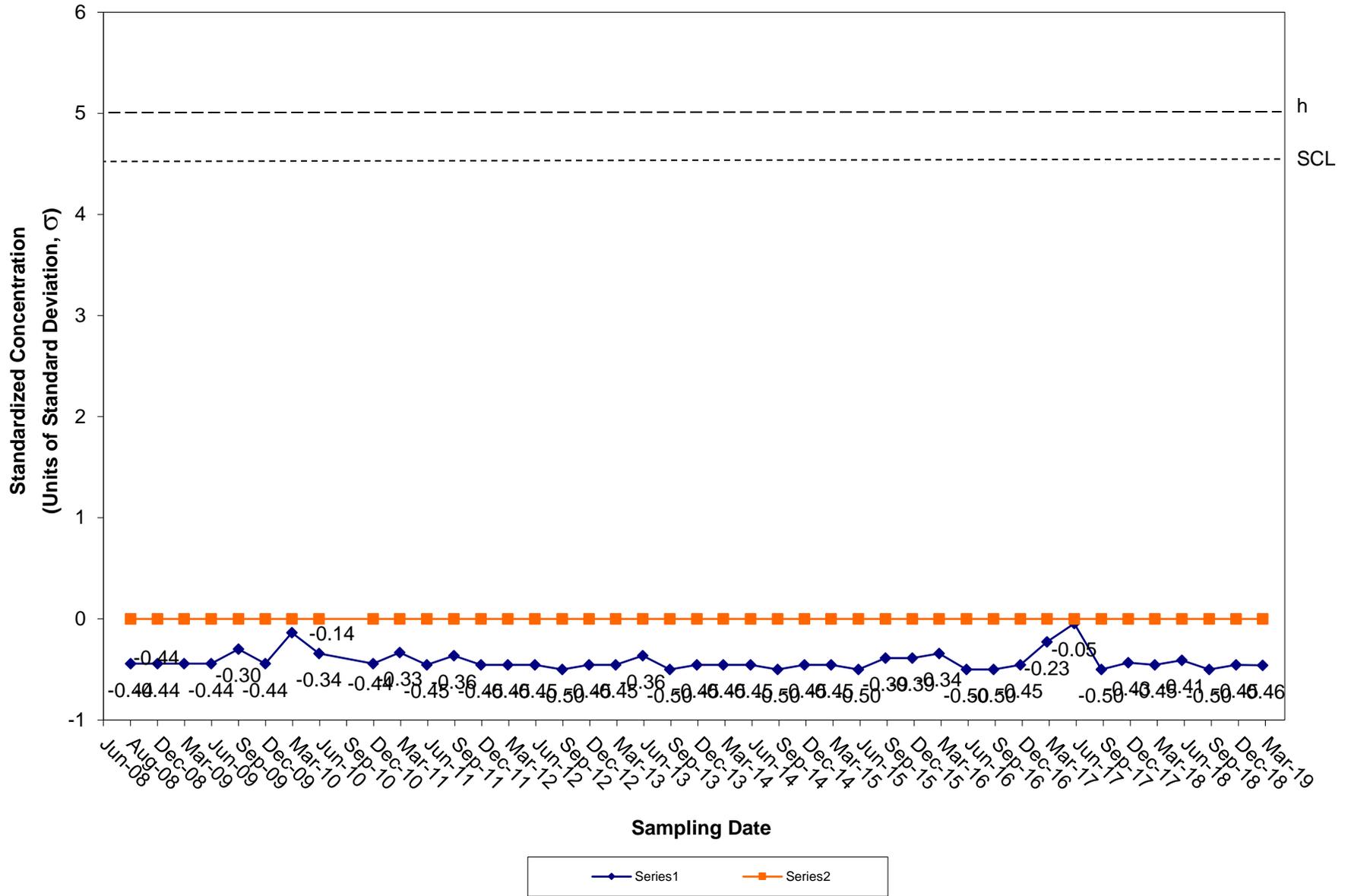
CUSUM Control Chart for MTBE Tiverton Landfill Groundwater Compliance Well OW-13



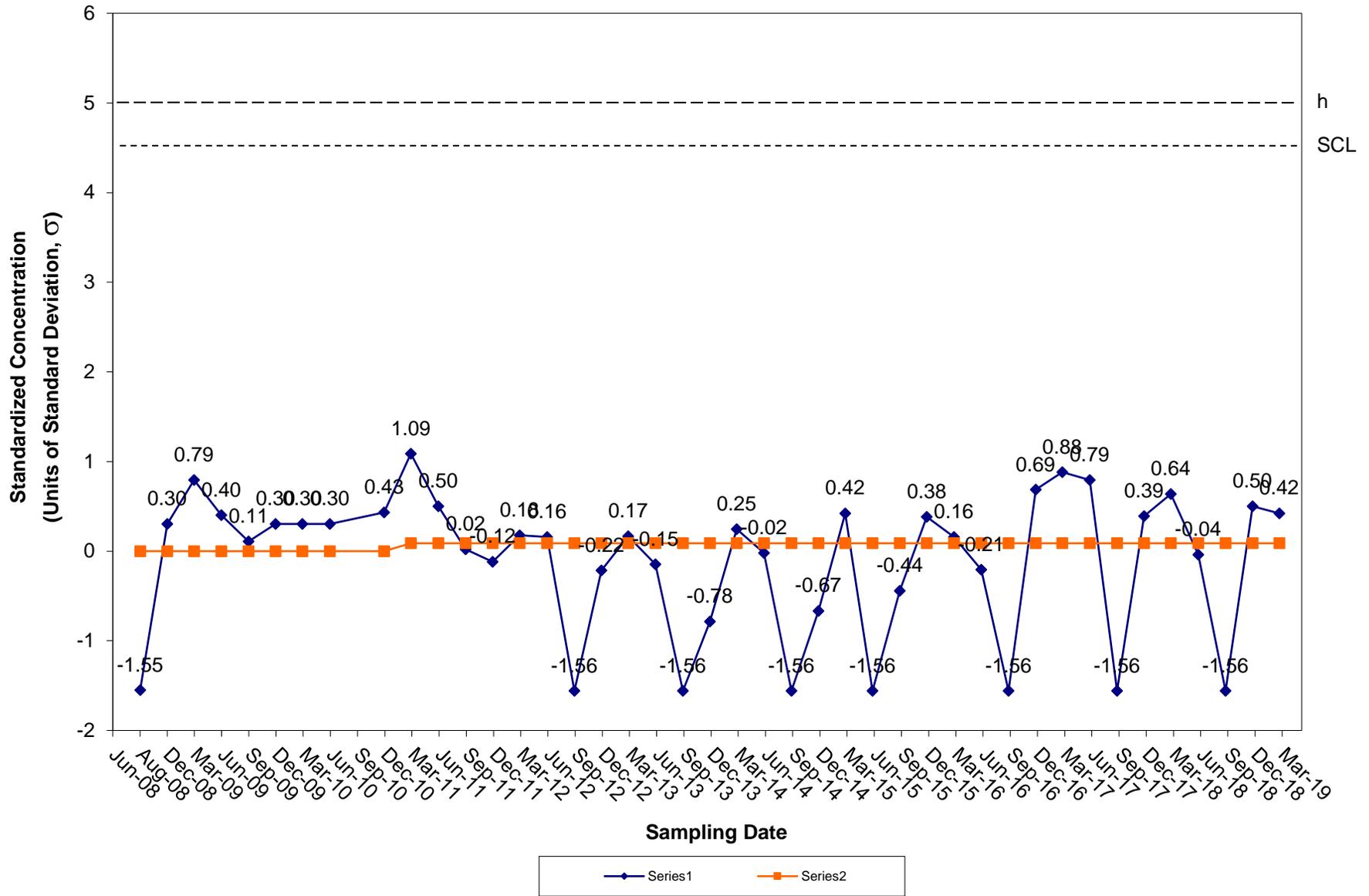
CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-14



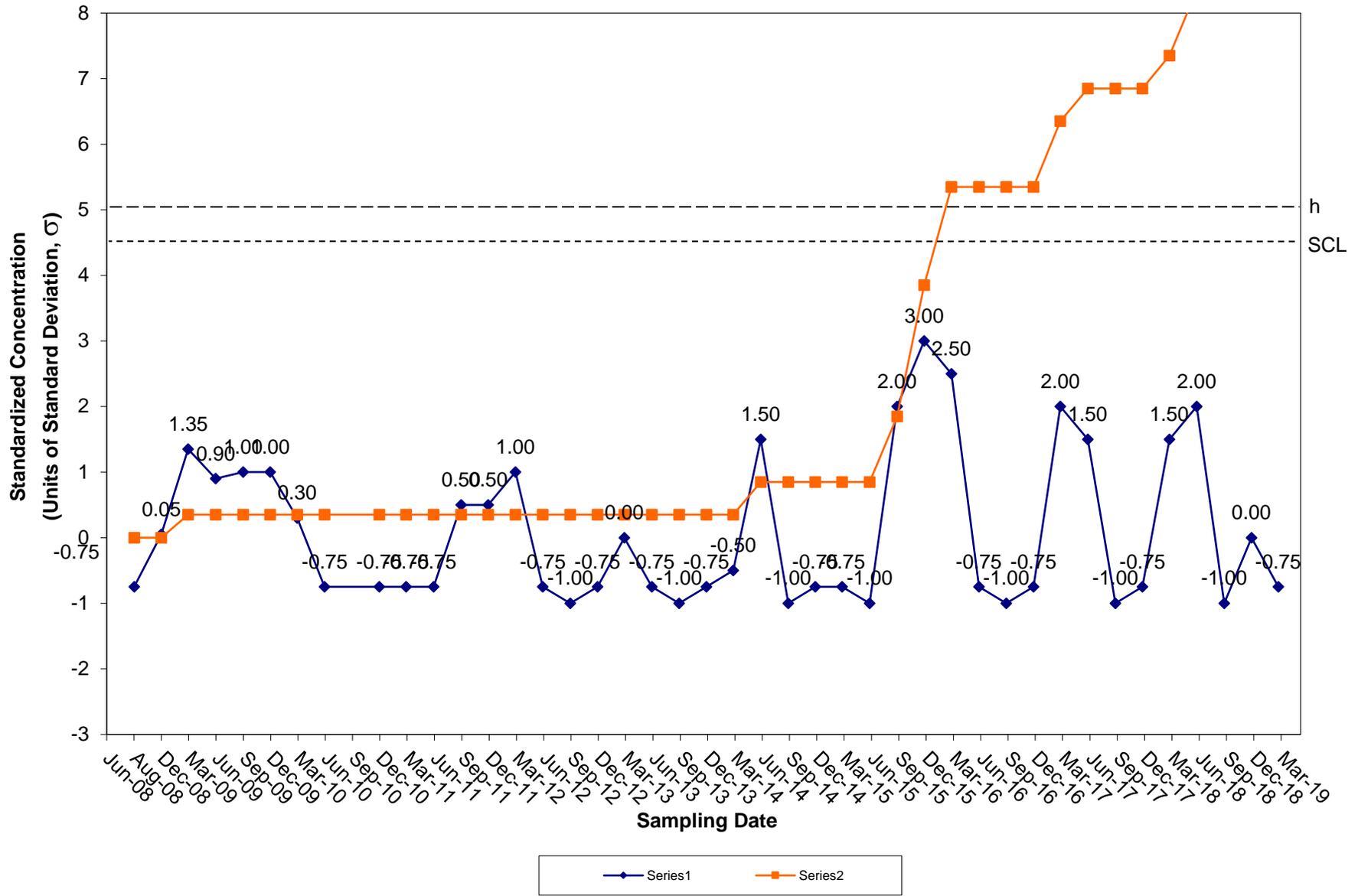
CUSUM Control Chart for Arsenic Tiverton Landfill Groundwater Compliance Well OW-14



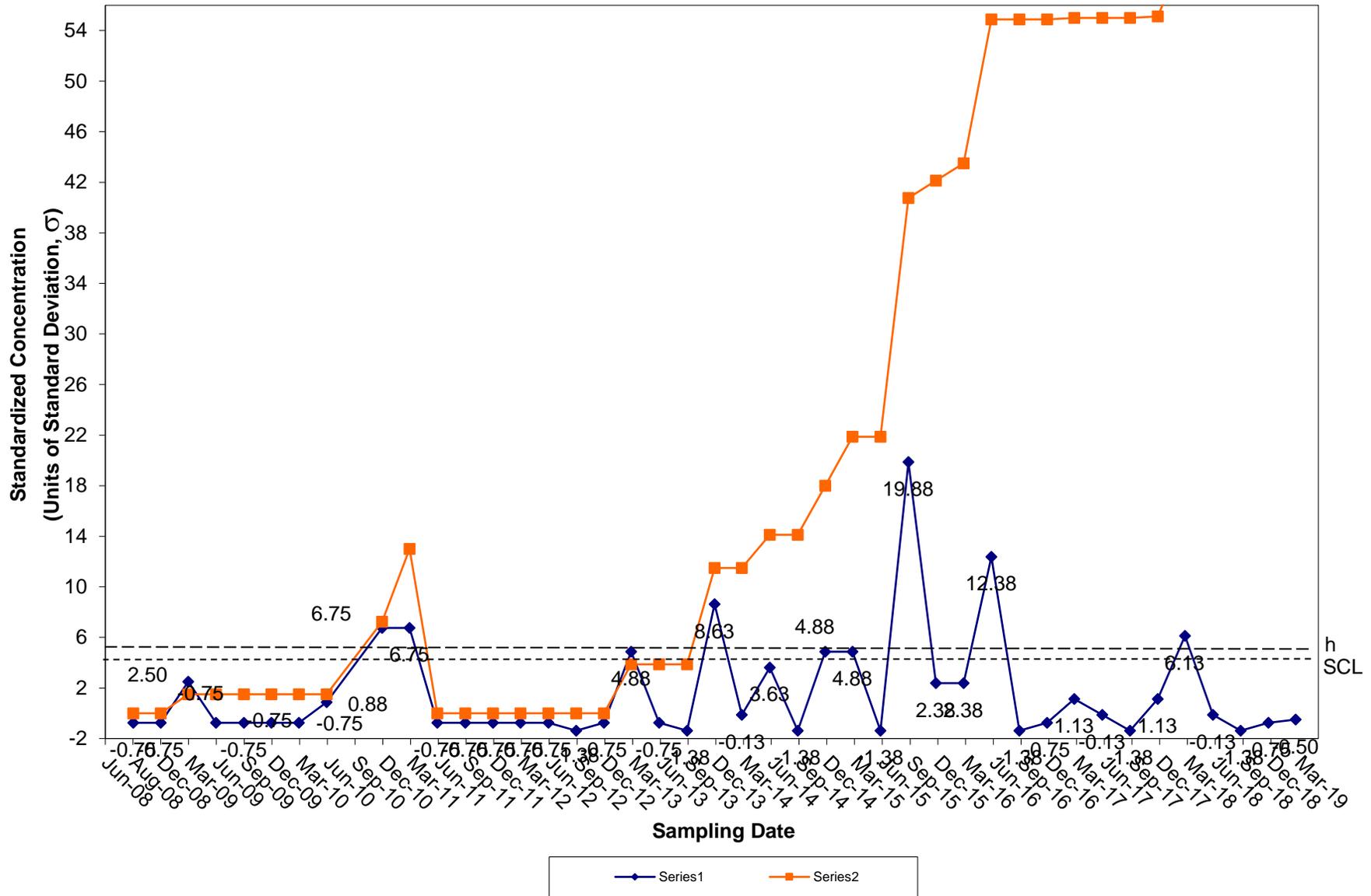
CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-14



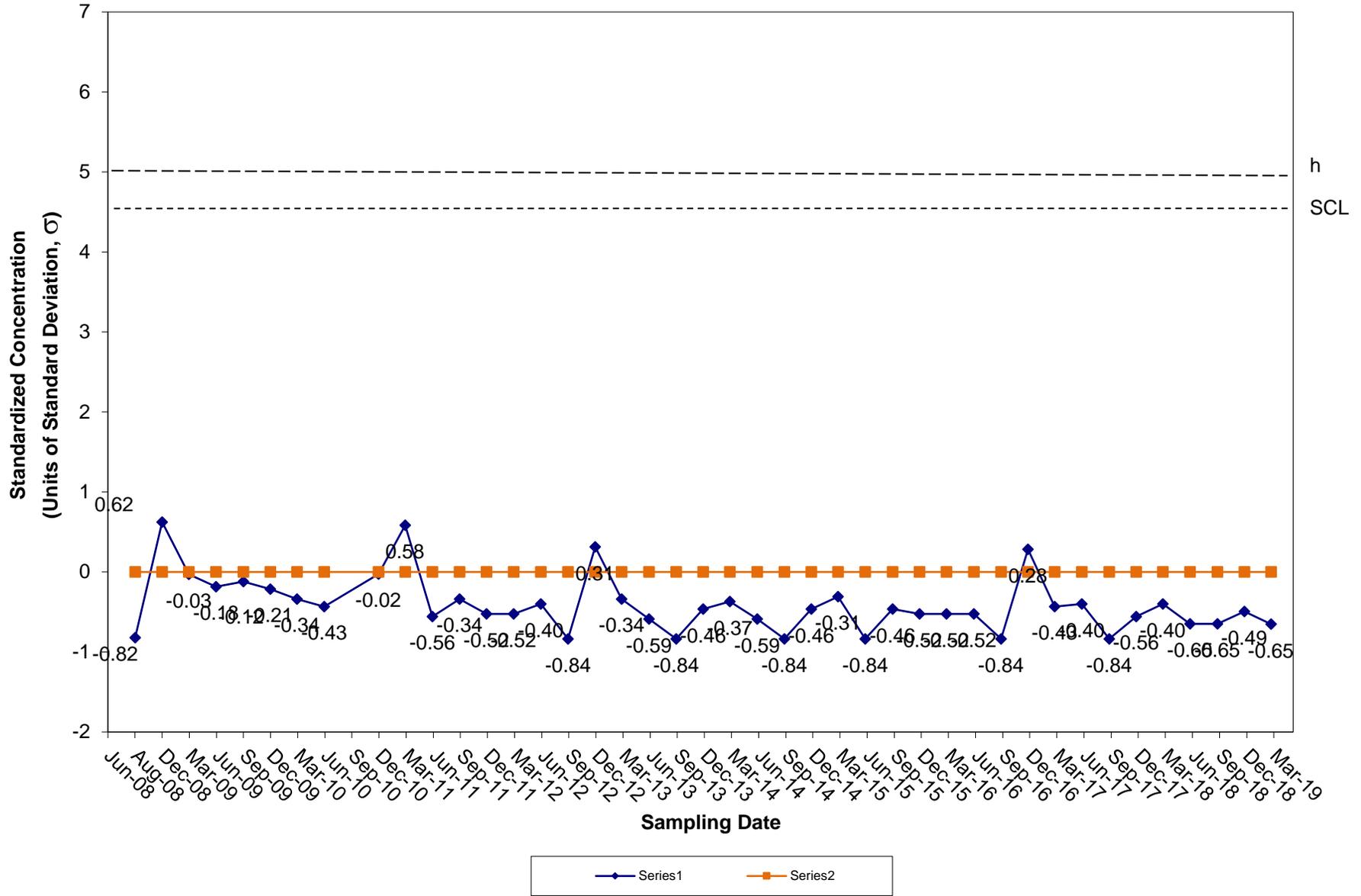
CUSUM Control Chart for Cadmium Tiverton Landfill Groundwater Compliance Well OW-14



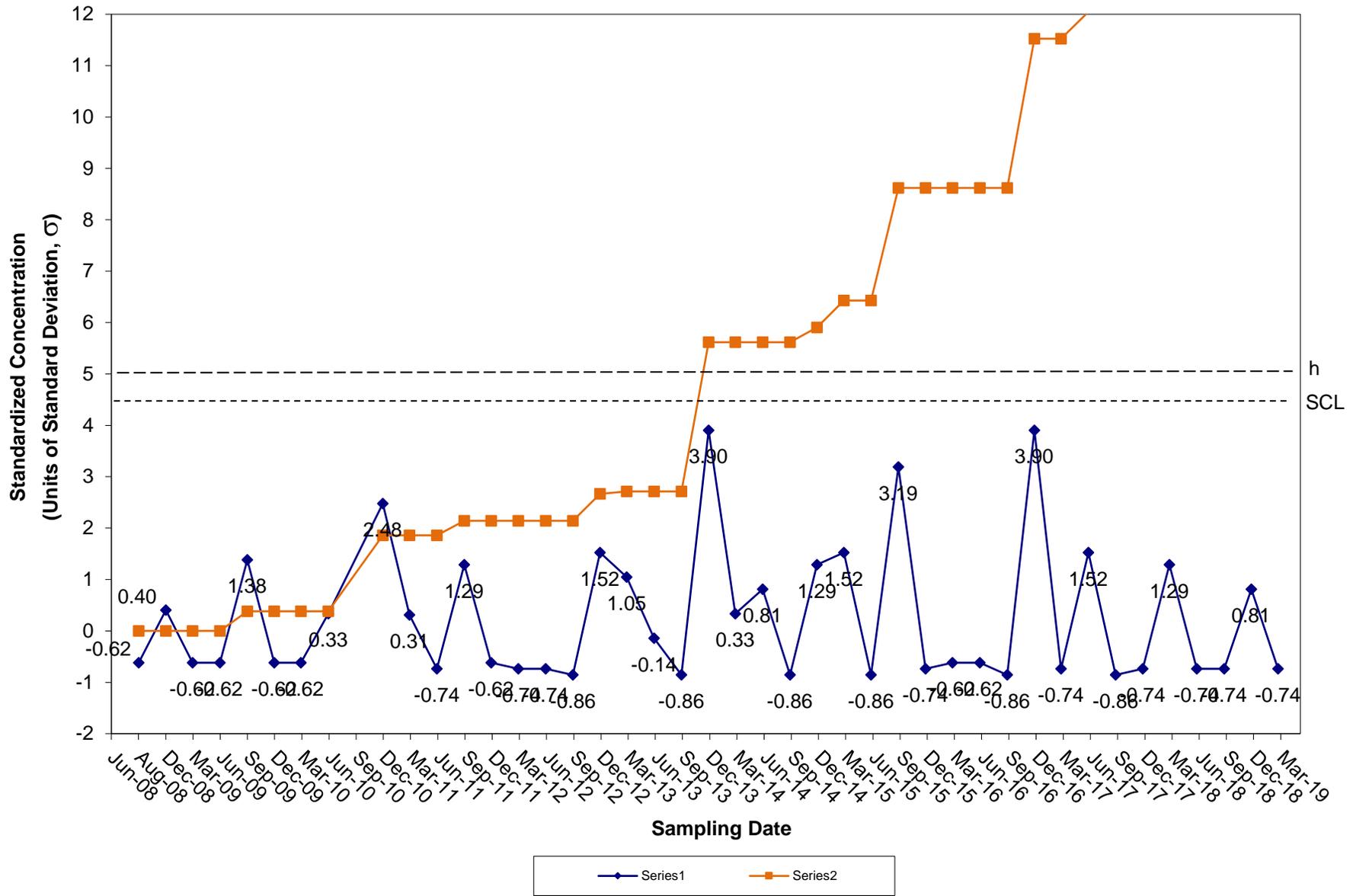
CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Compliance Well OW-14



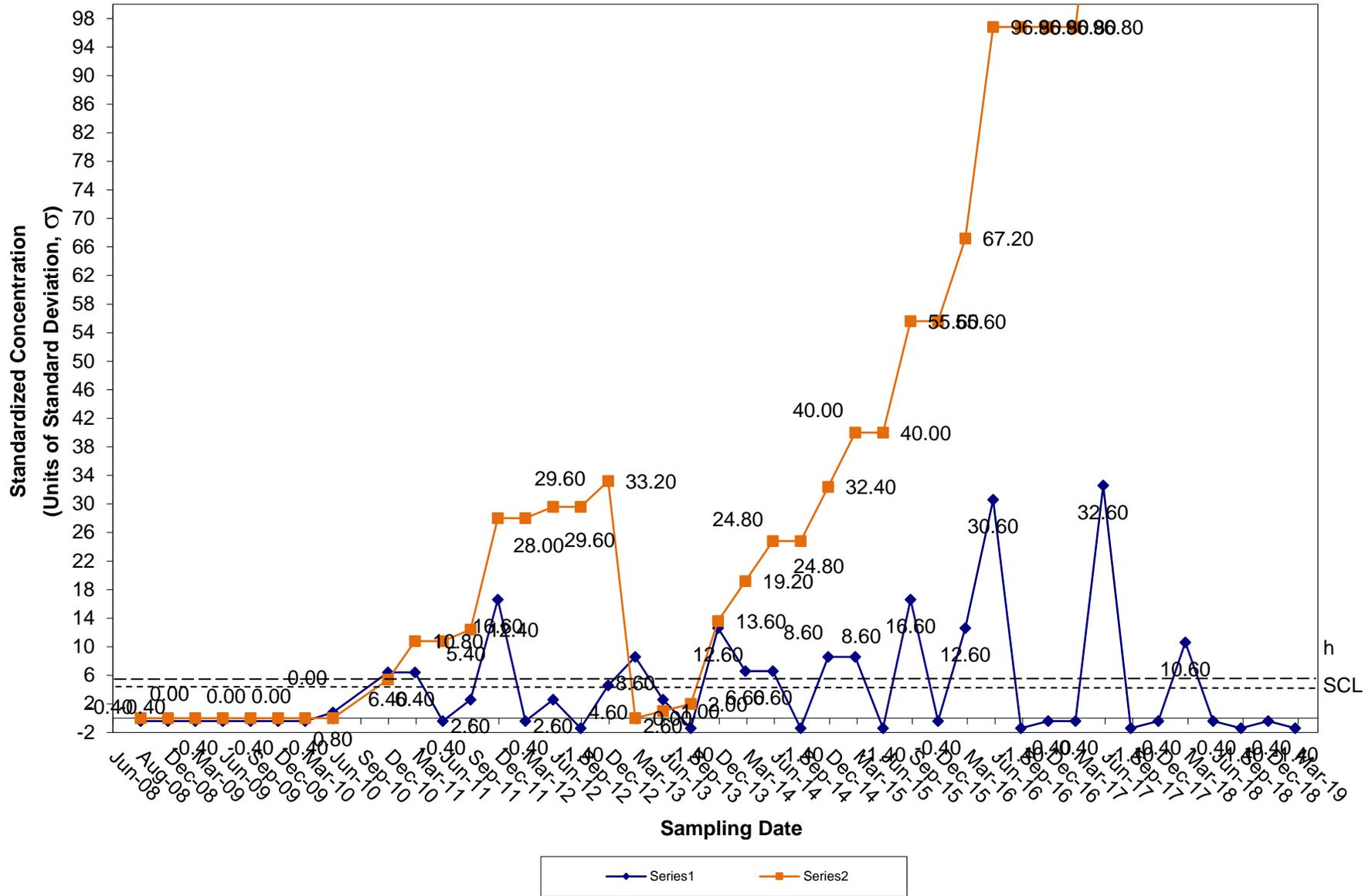
CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Compliance Well OW-14



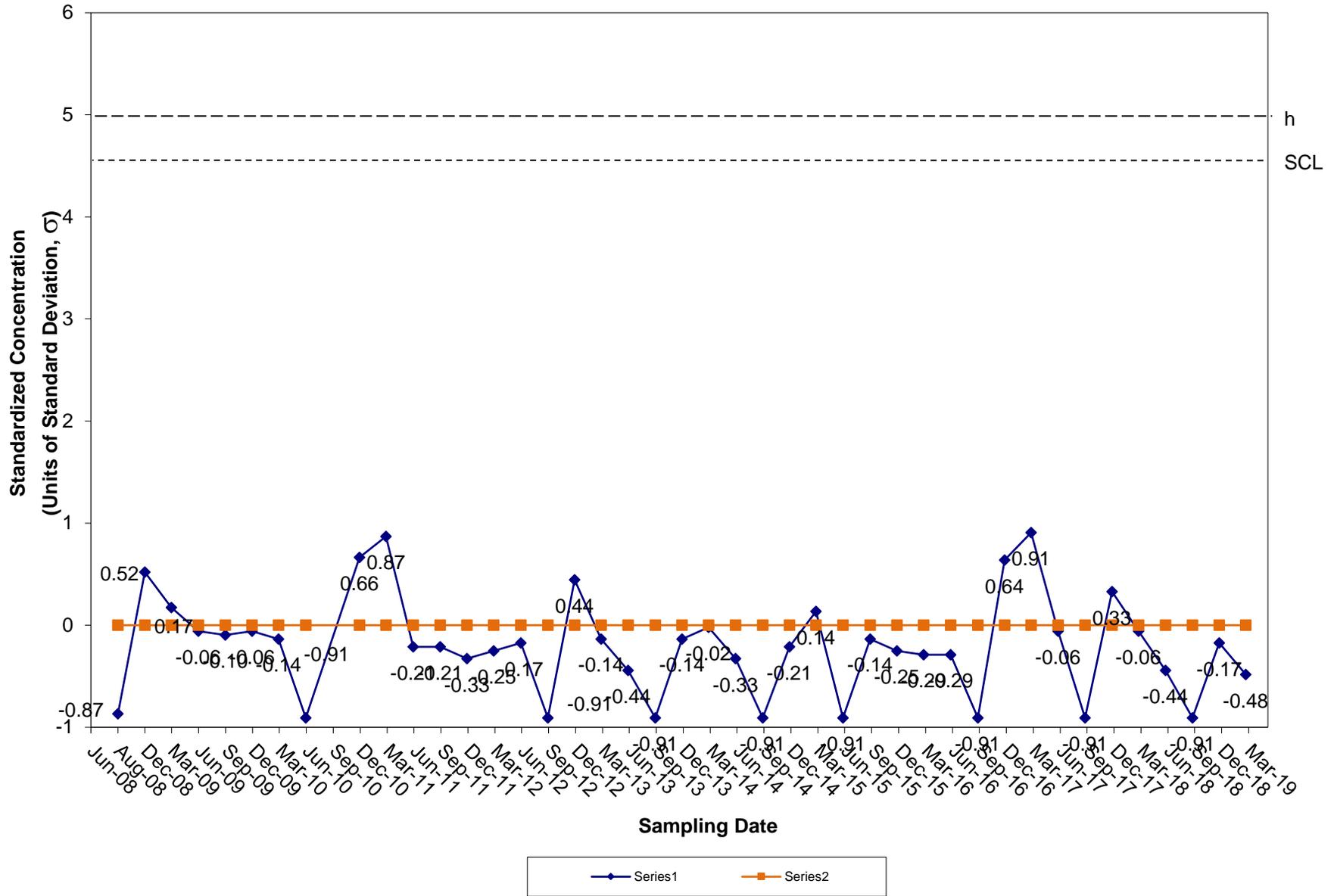
CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-14



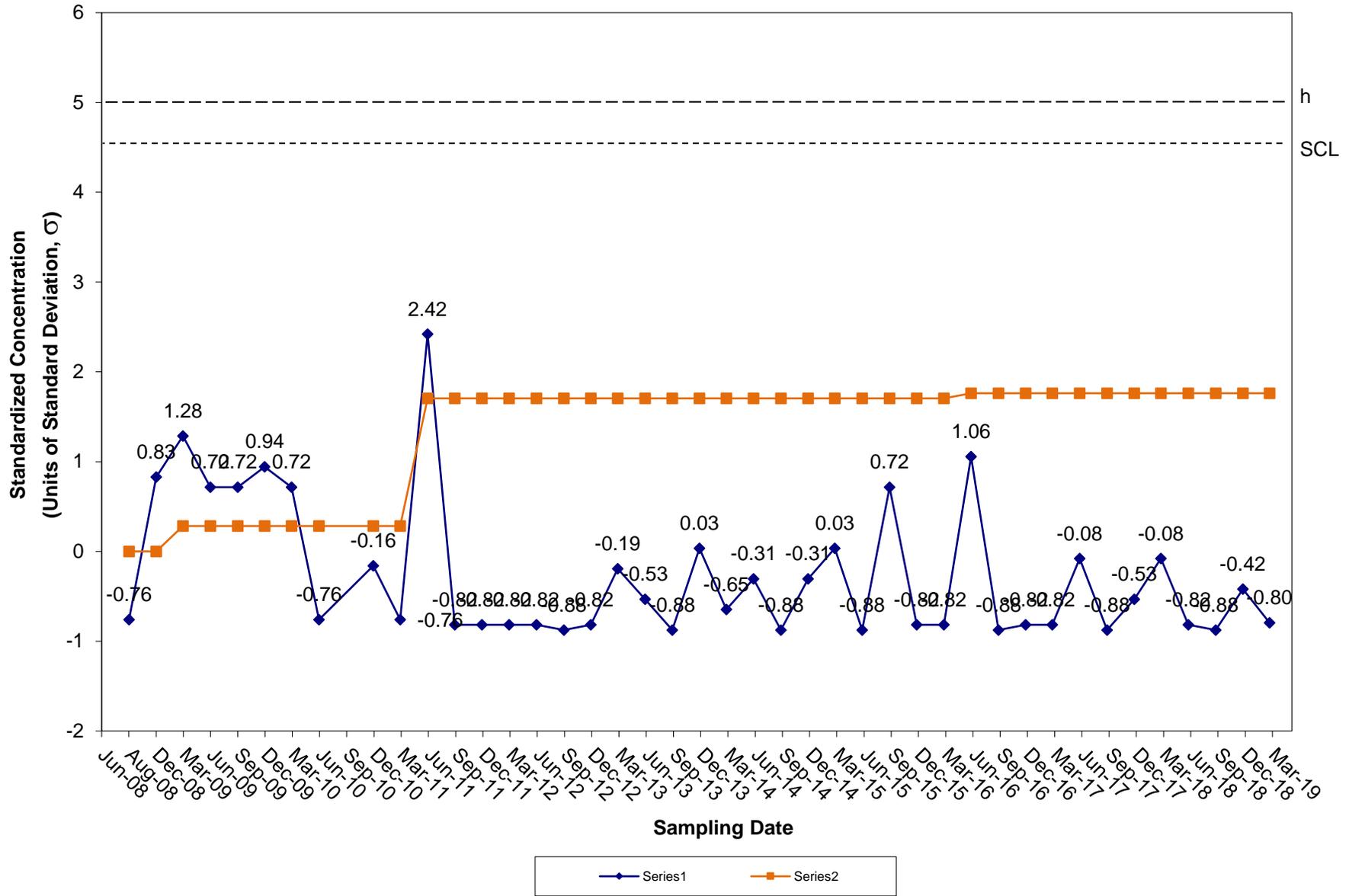
CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-14



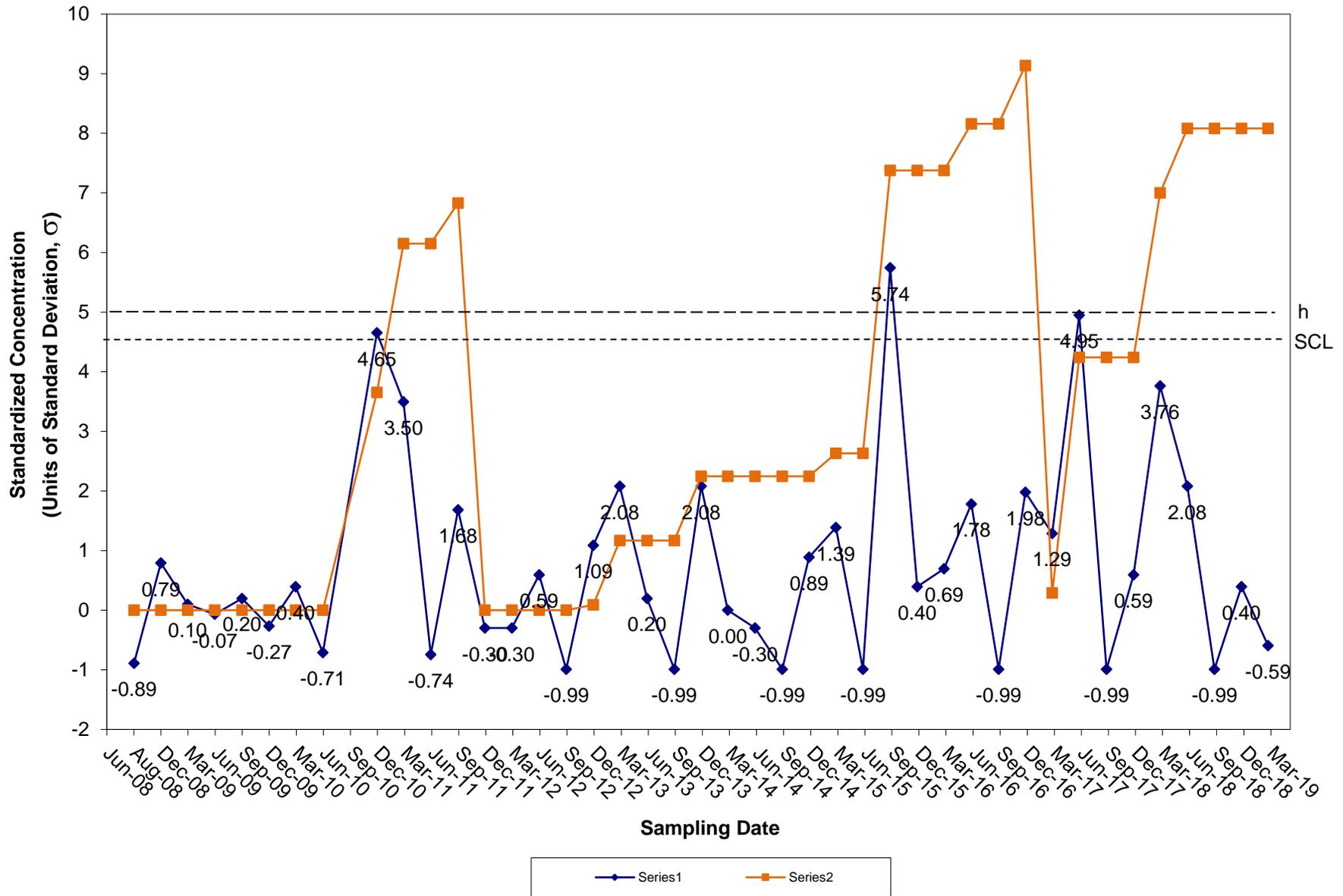
CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-14



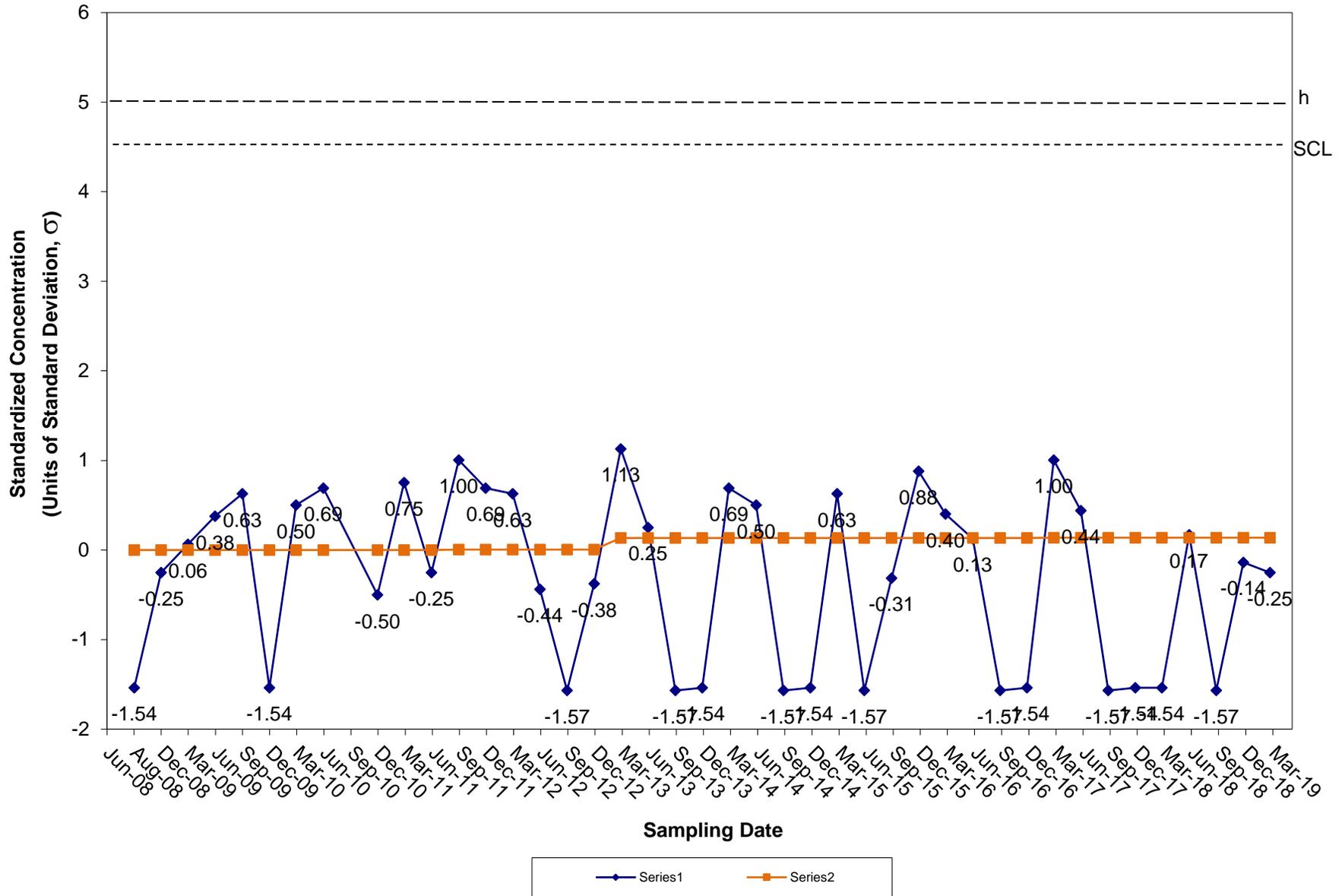
CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-14



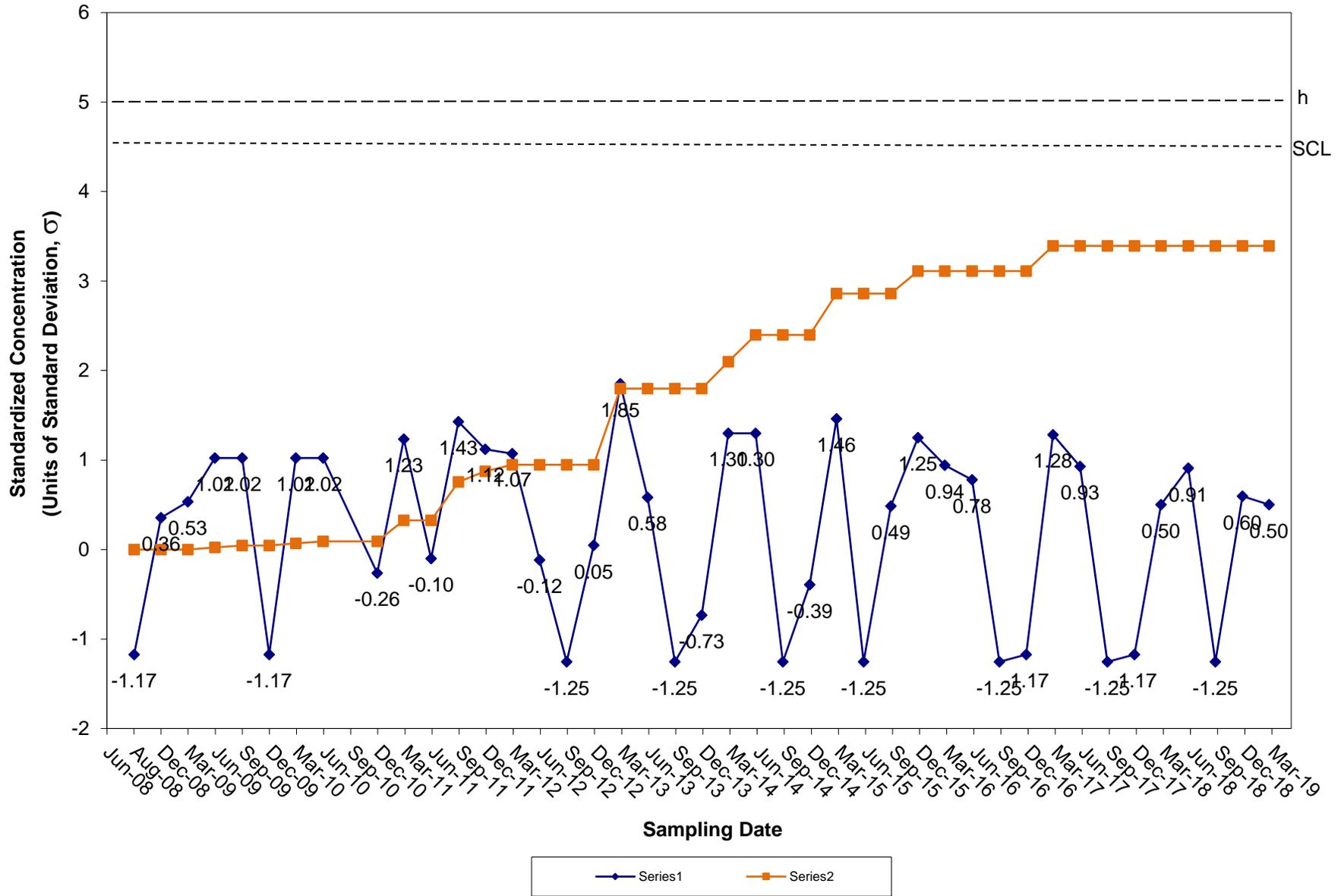
CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-14



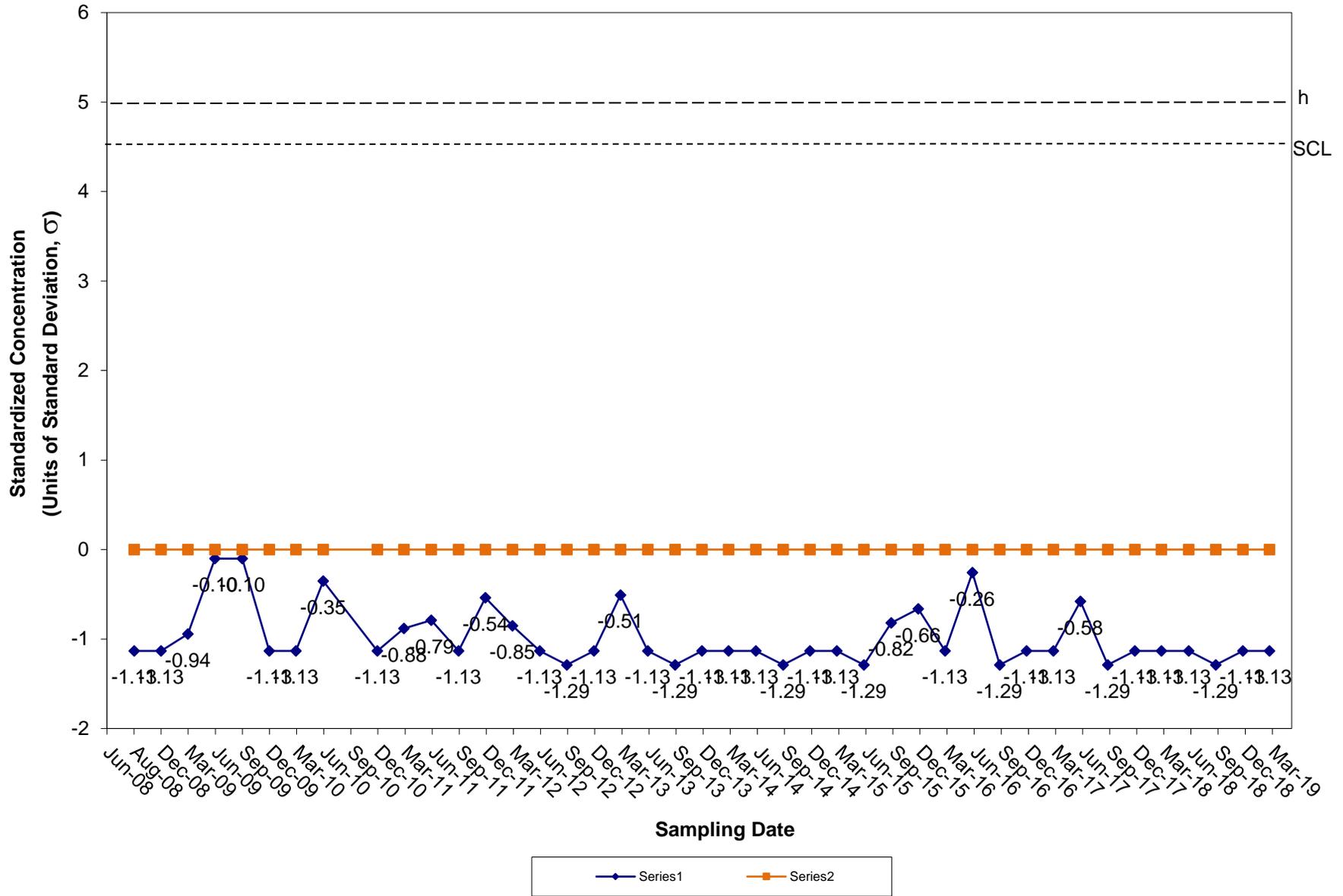
CUSUM Control Chart for Benzene Tiverton Landfill Groundwater Compliance Well OW-14



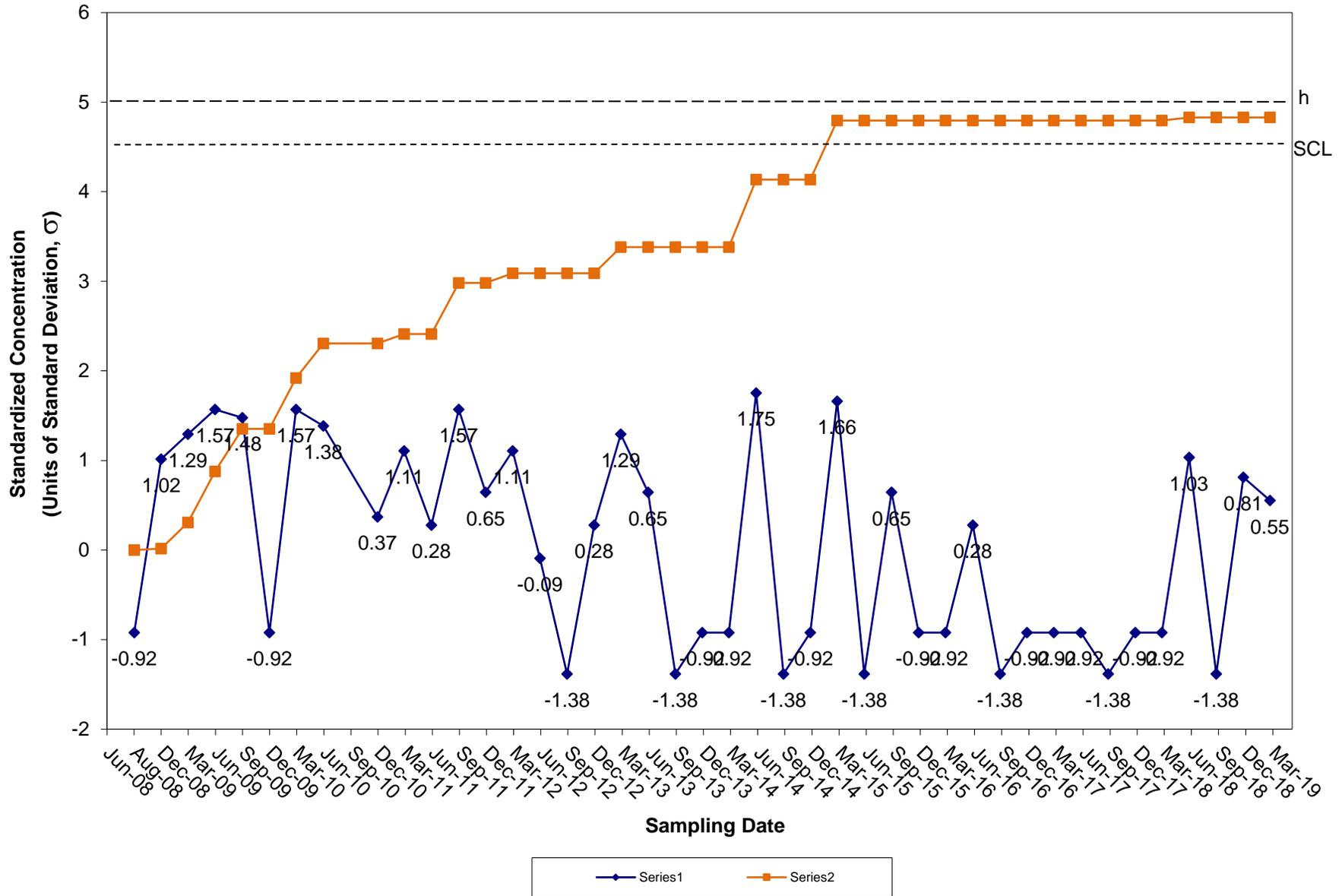
CUSUM Control Chart for Chlorobenzene Tiverton Landfill Groundwater Compliance Well OW-14



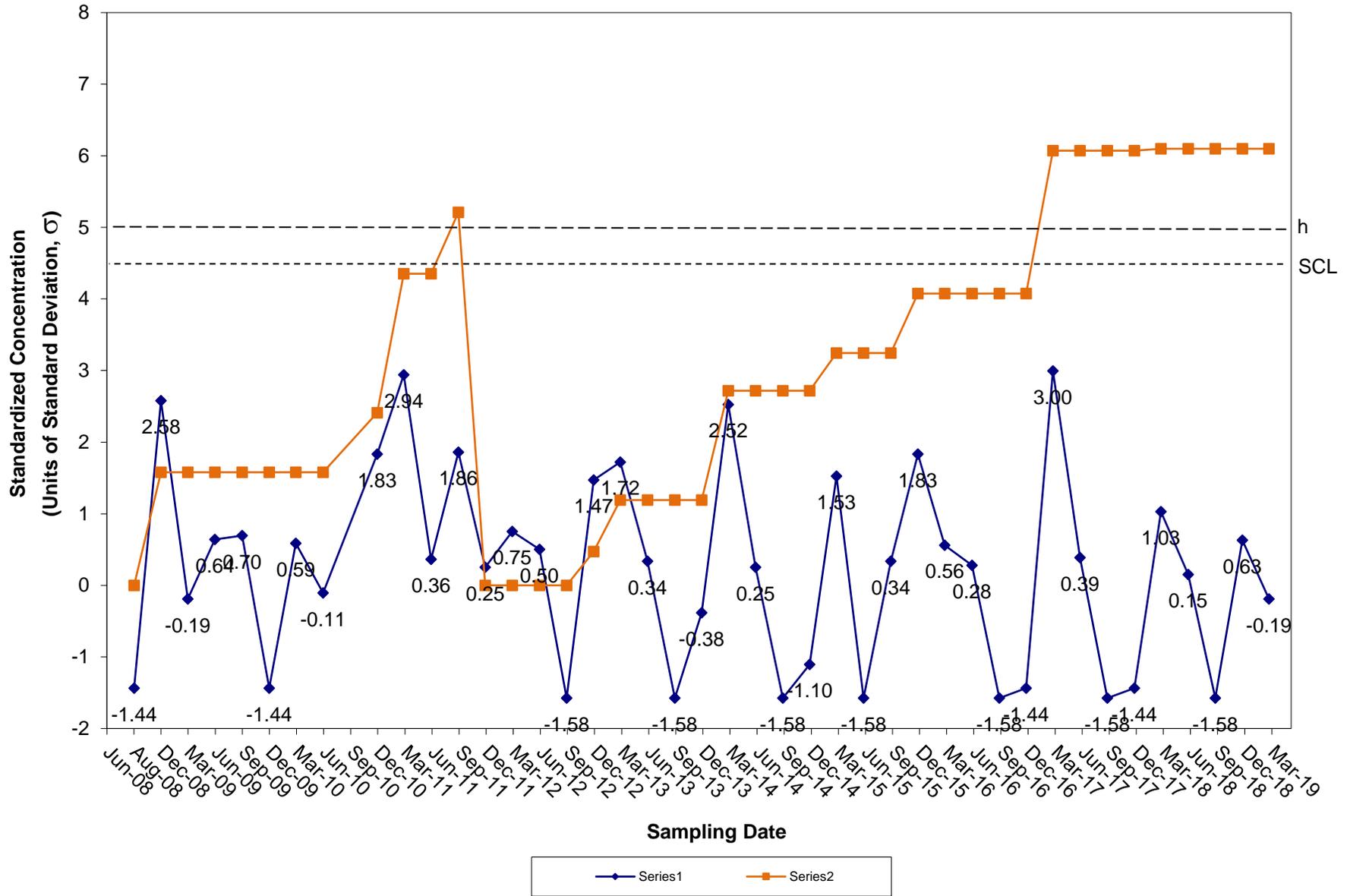
CUSUM Control Chart for Chloroethane Tiverton Landfill Groundwater Compliance Well OW-14



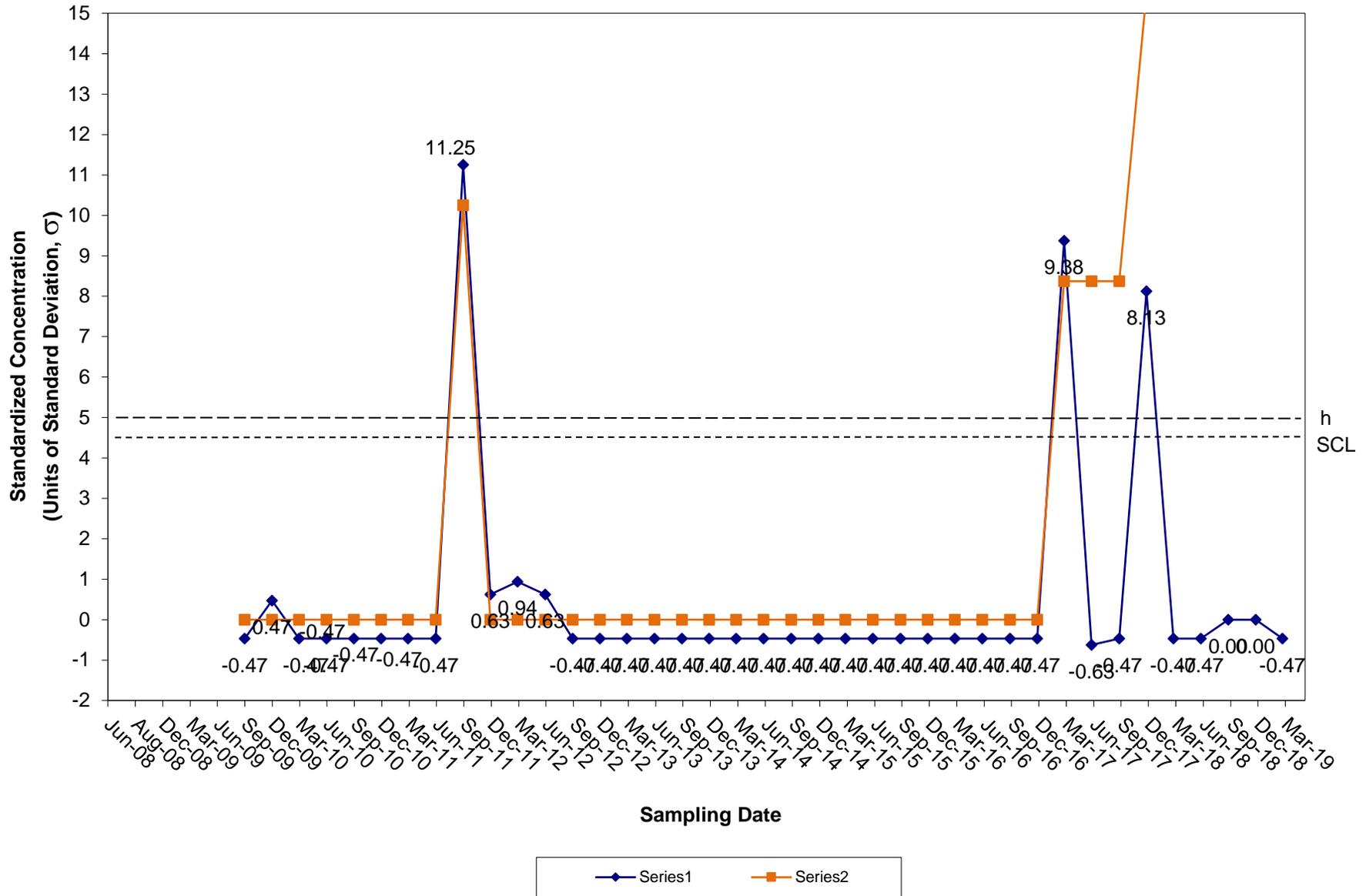
CUSUM Control Chart for 1,4-Dichlorobenzene Tiverton Landfill Groundwater Compliance Well OW-14



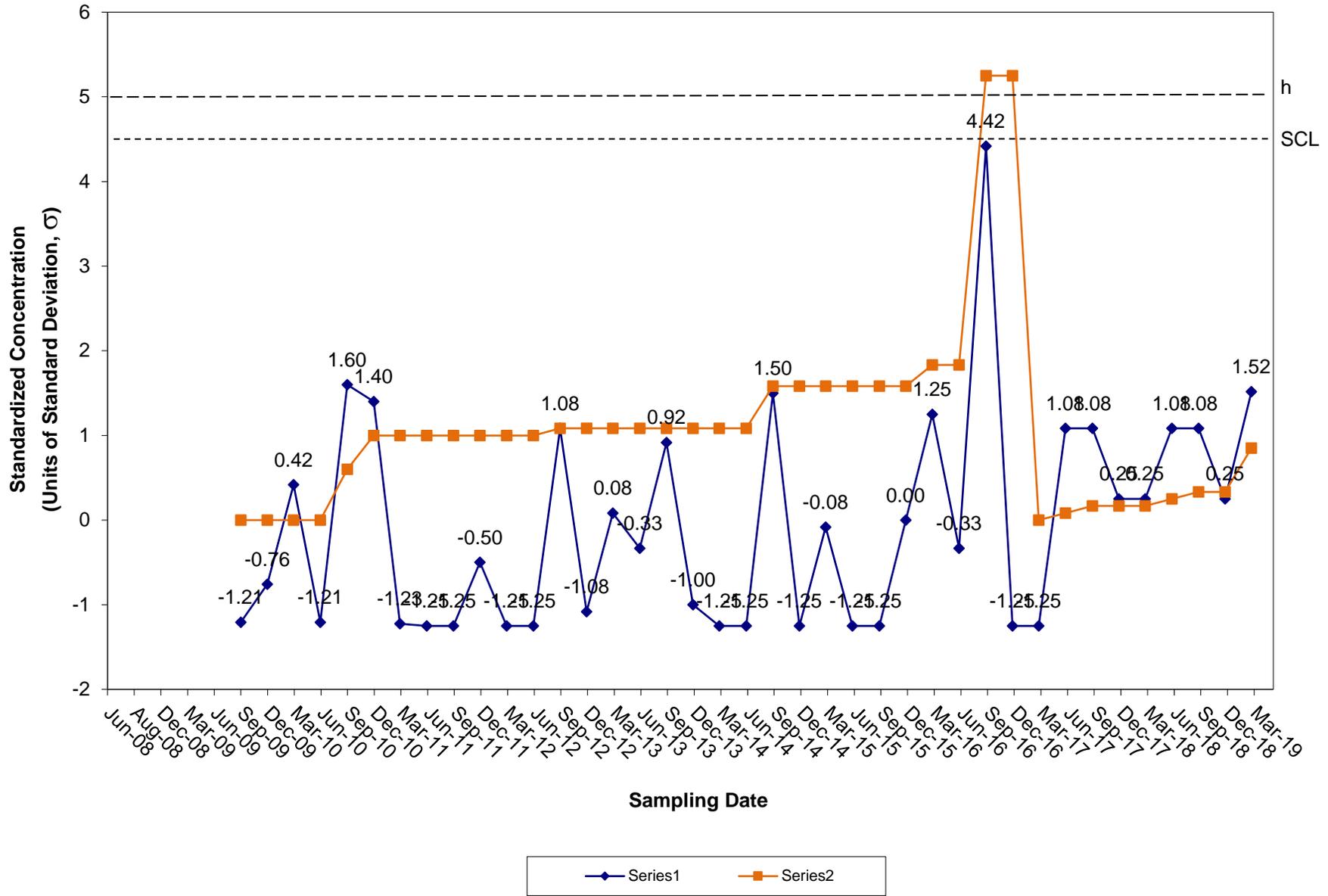
CUSUM Control Chart for MTBE Tiverton Landfill Groundwater Compliance Well OW-14



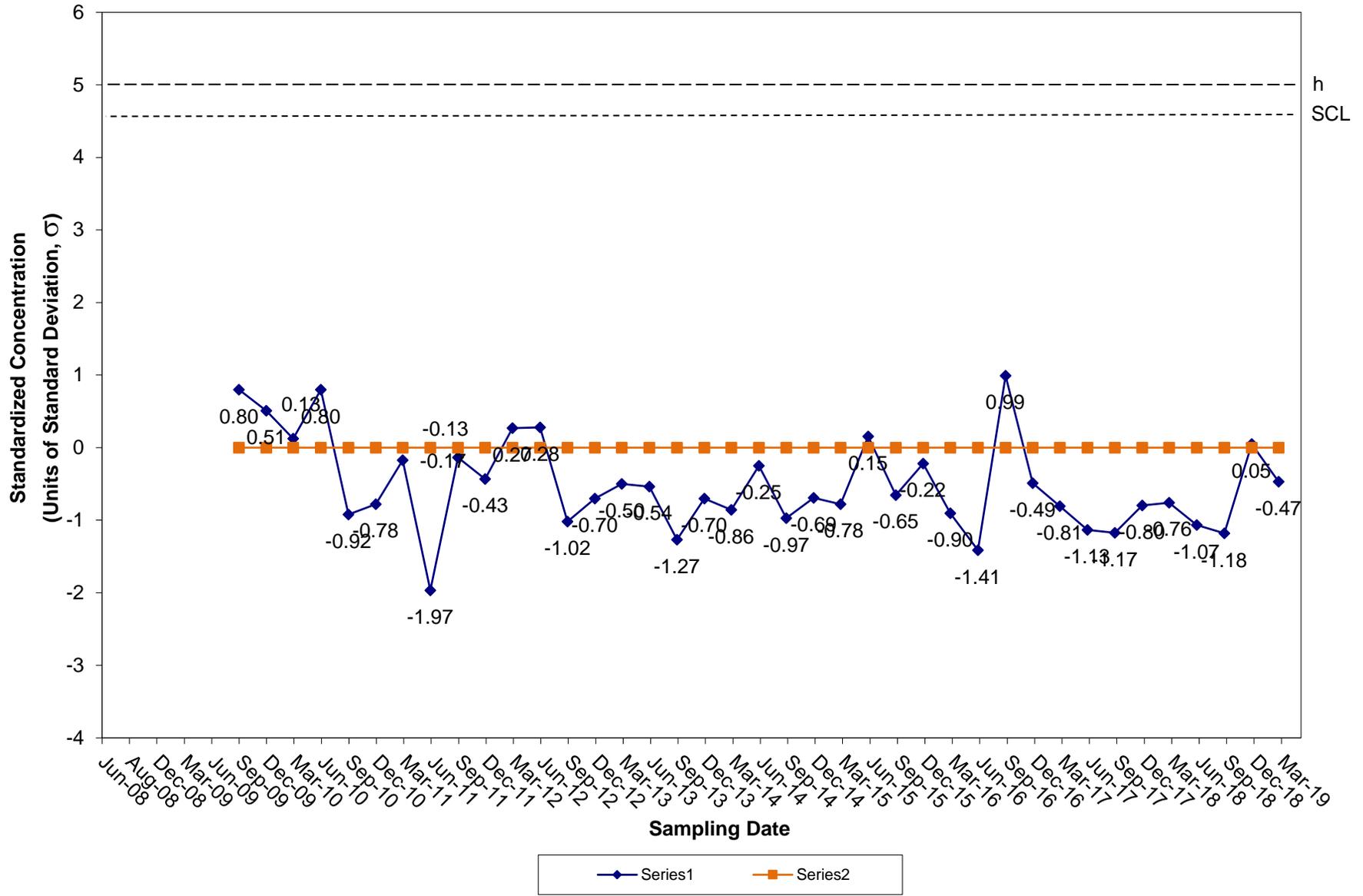
CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-15



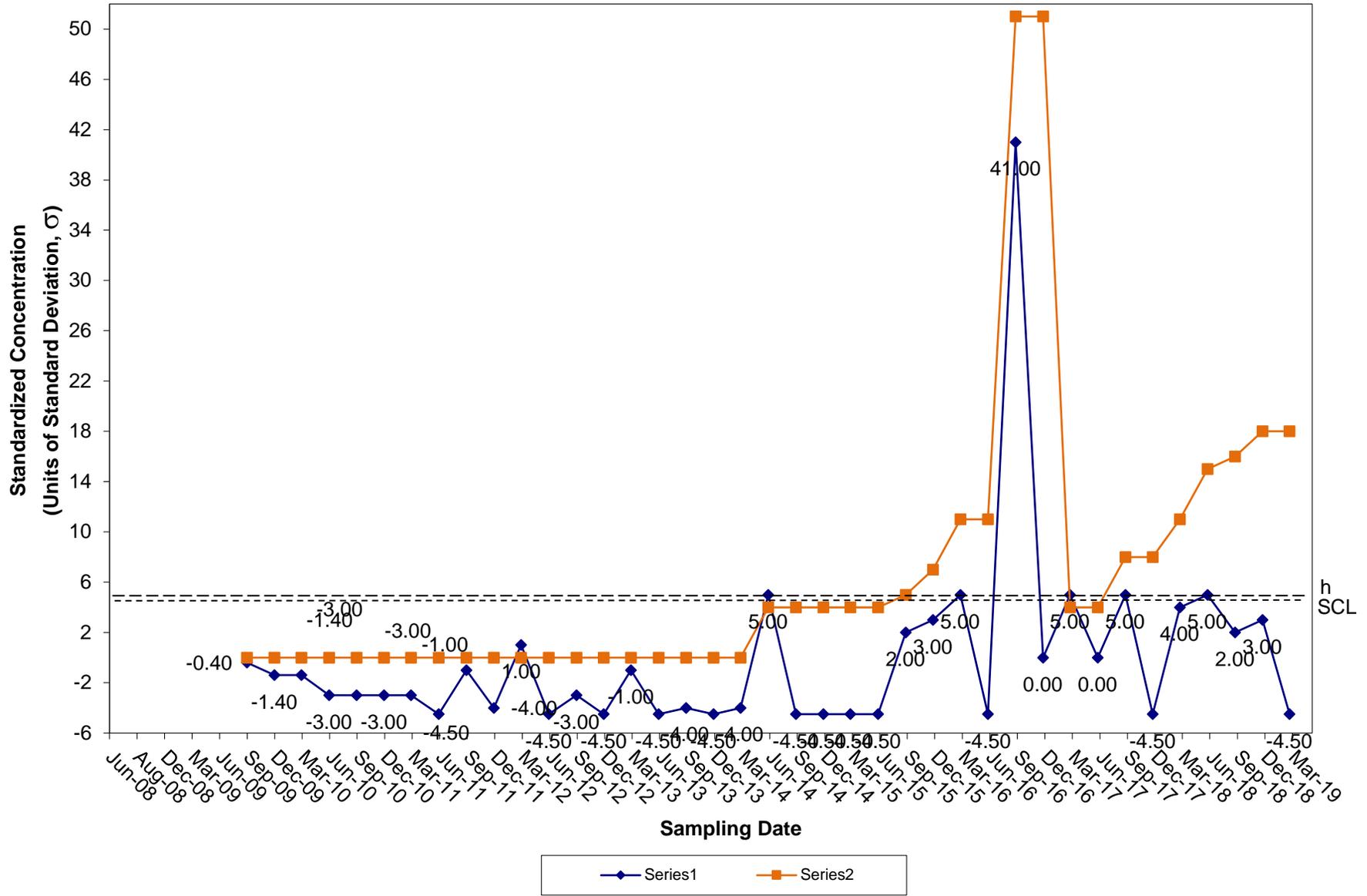
CUSUM Control Chart for Arsenic Tiverton Landfill Groundwater Compliance Well OW-15



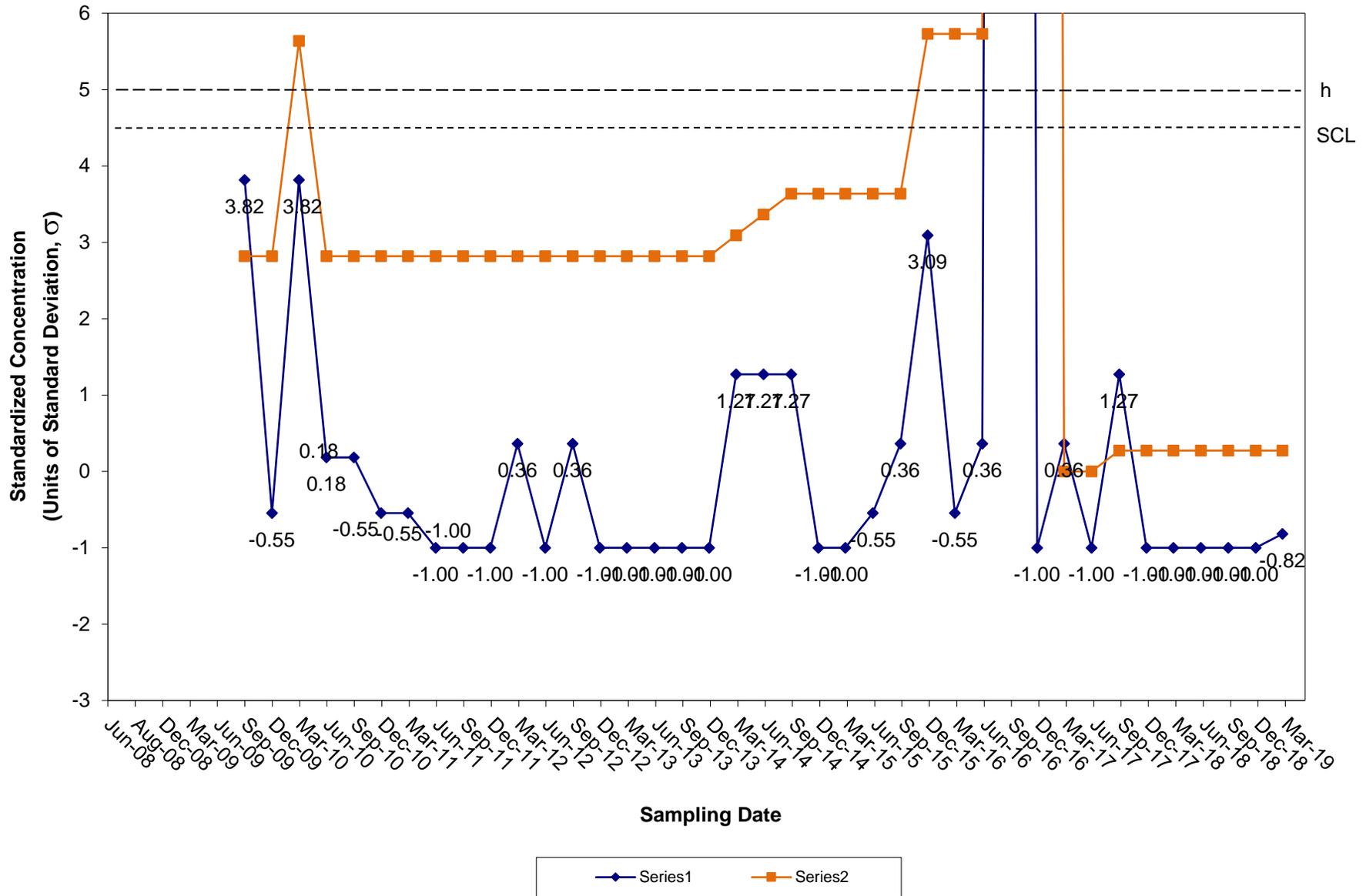
CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-15



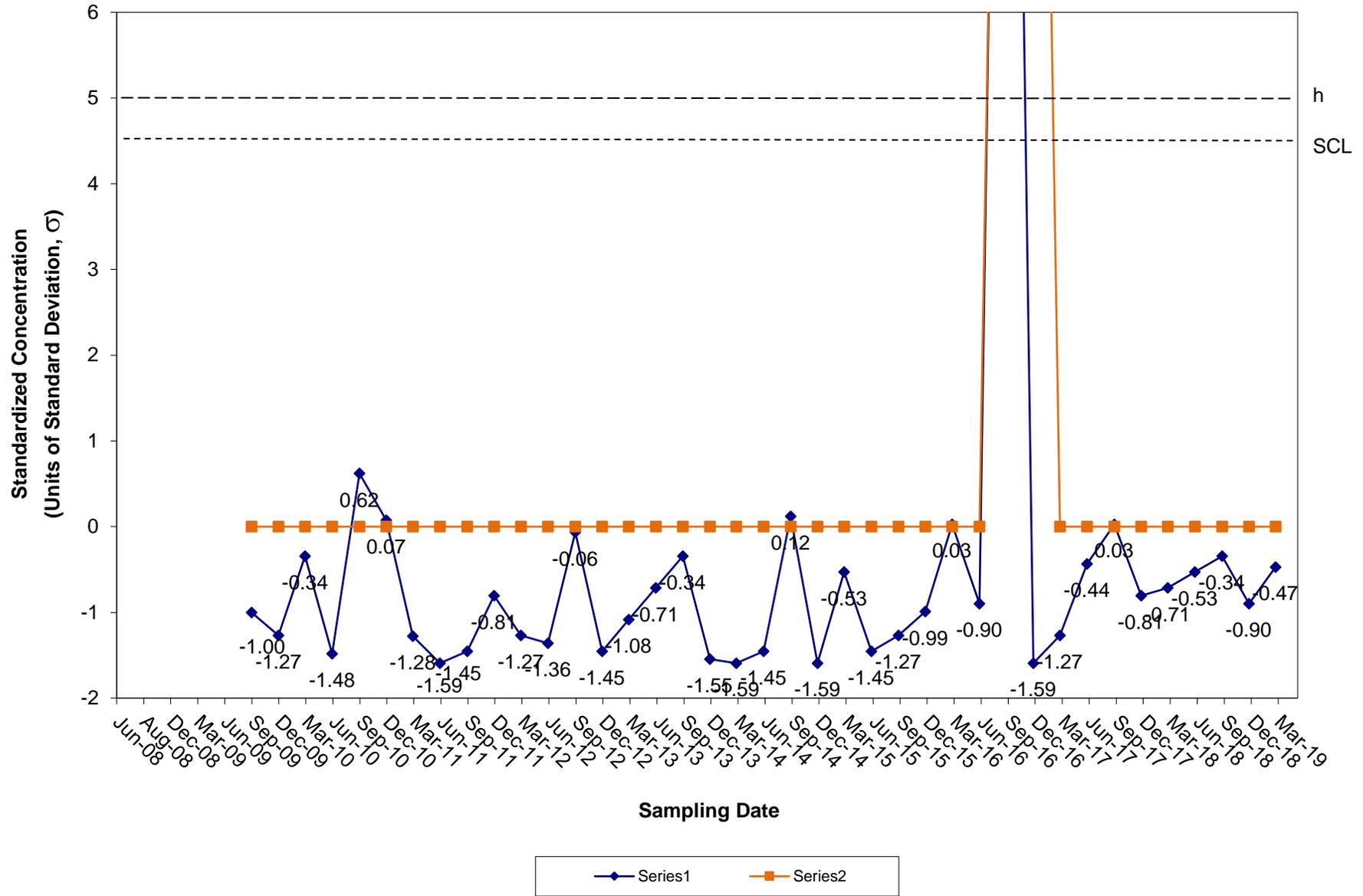
CUSUM Control Chart for Cadmium Tiverton Landfill Groundwater Compliance Well OW-15



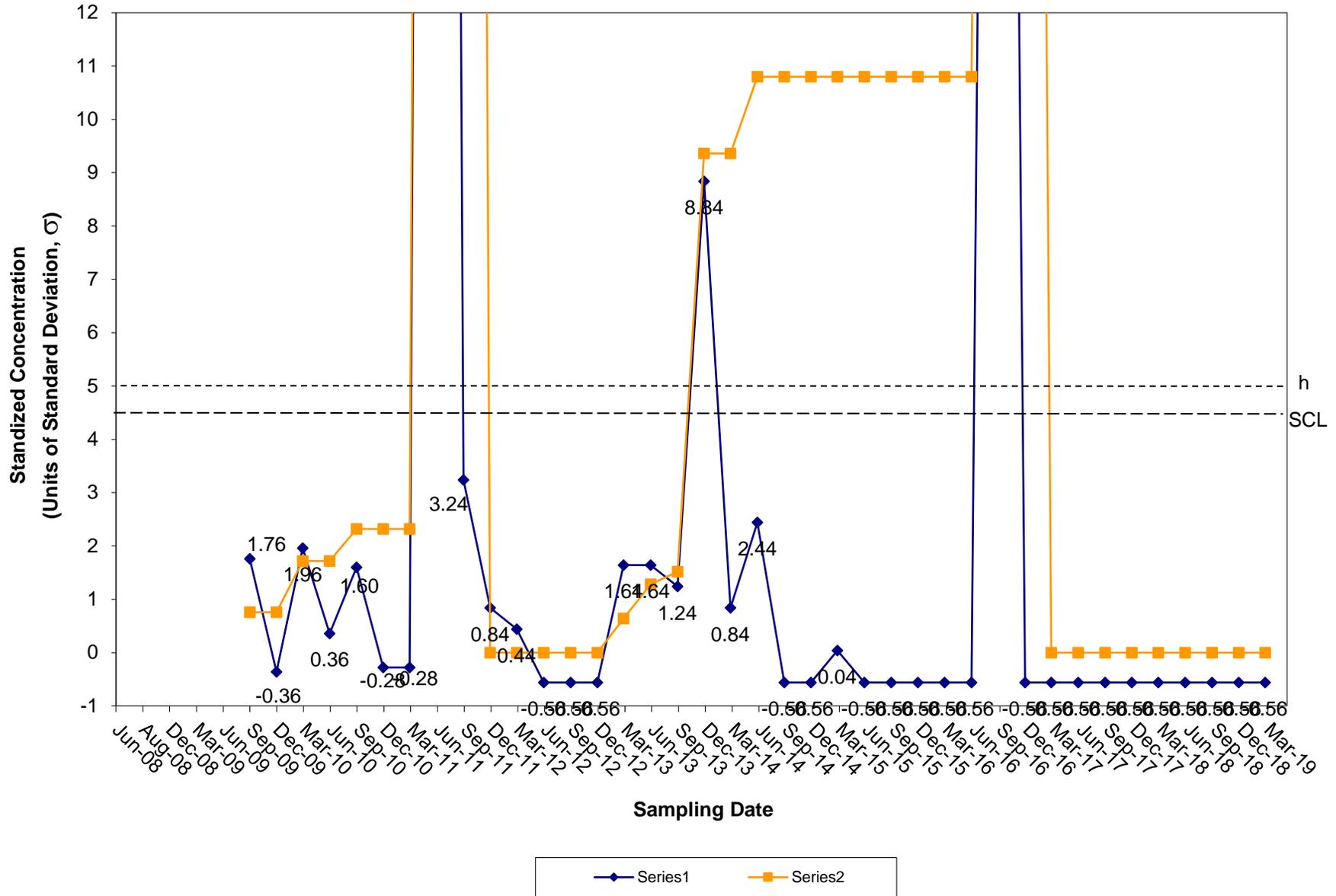
CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Compliance Well OW-15



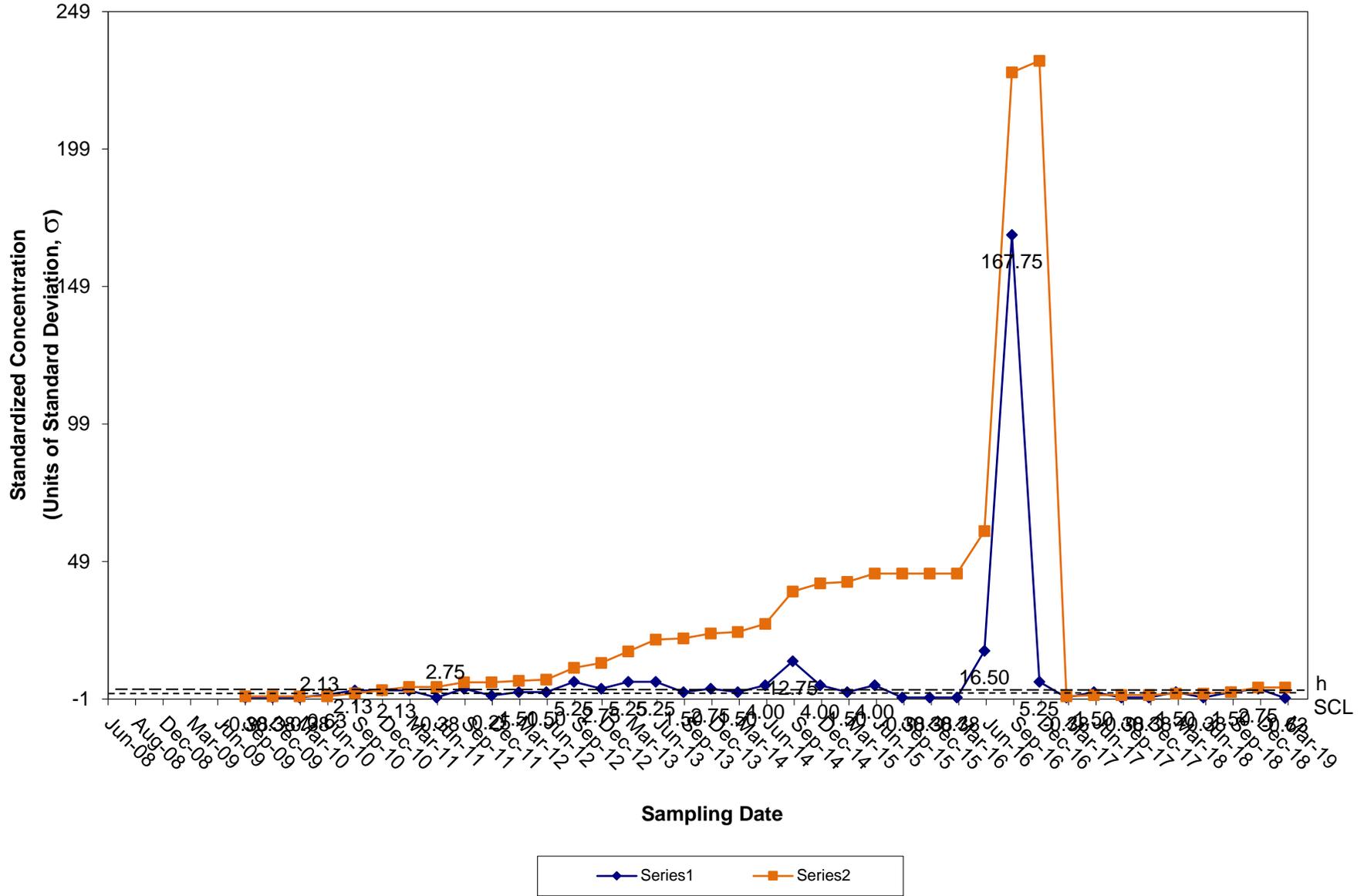
CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Compliance Well OW-15



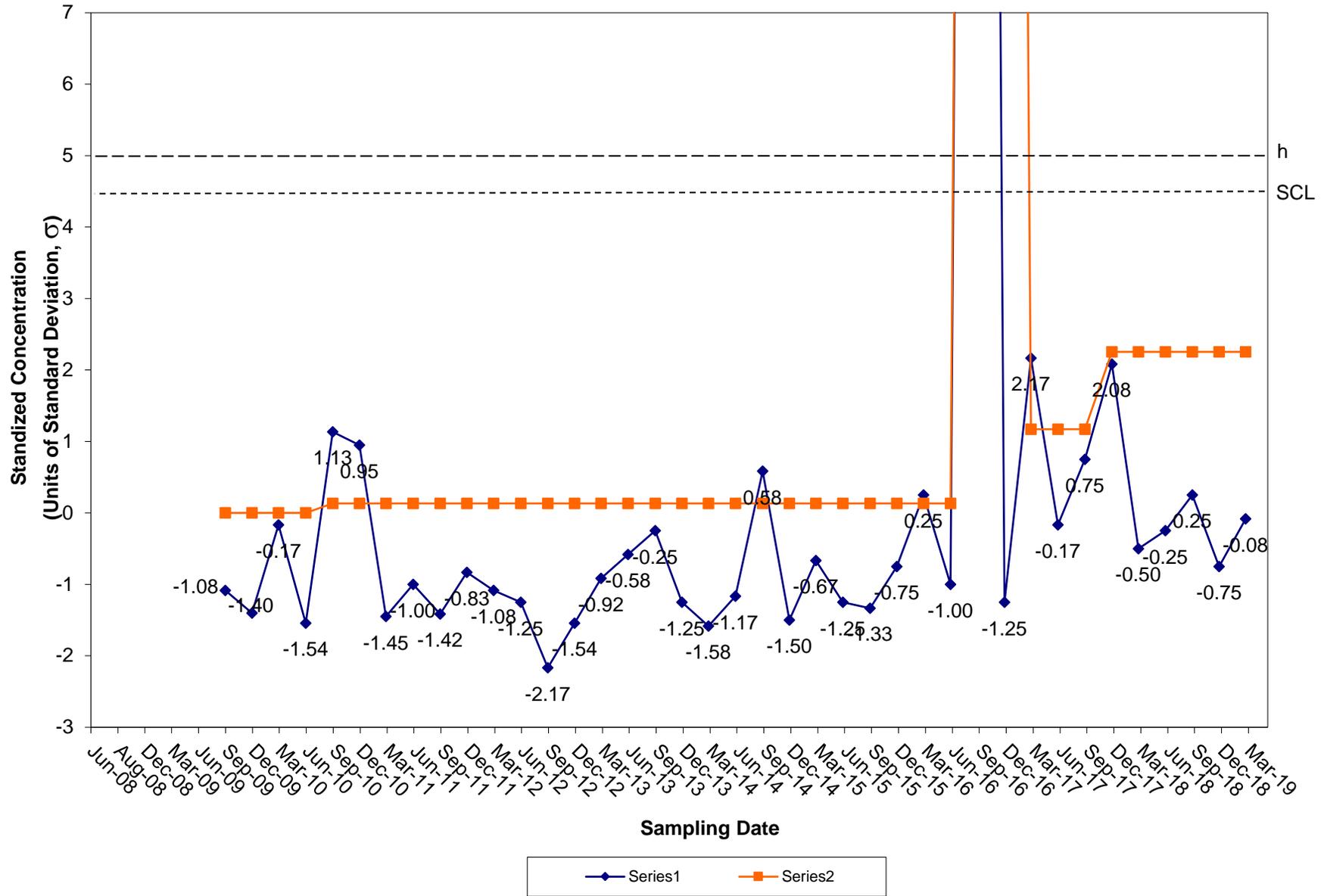
CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-15



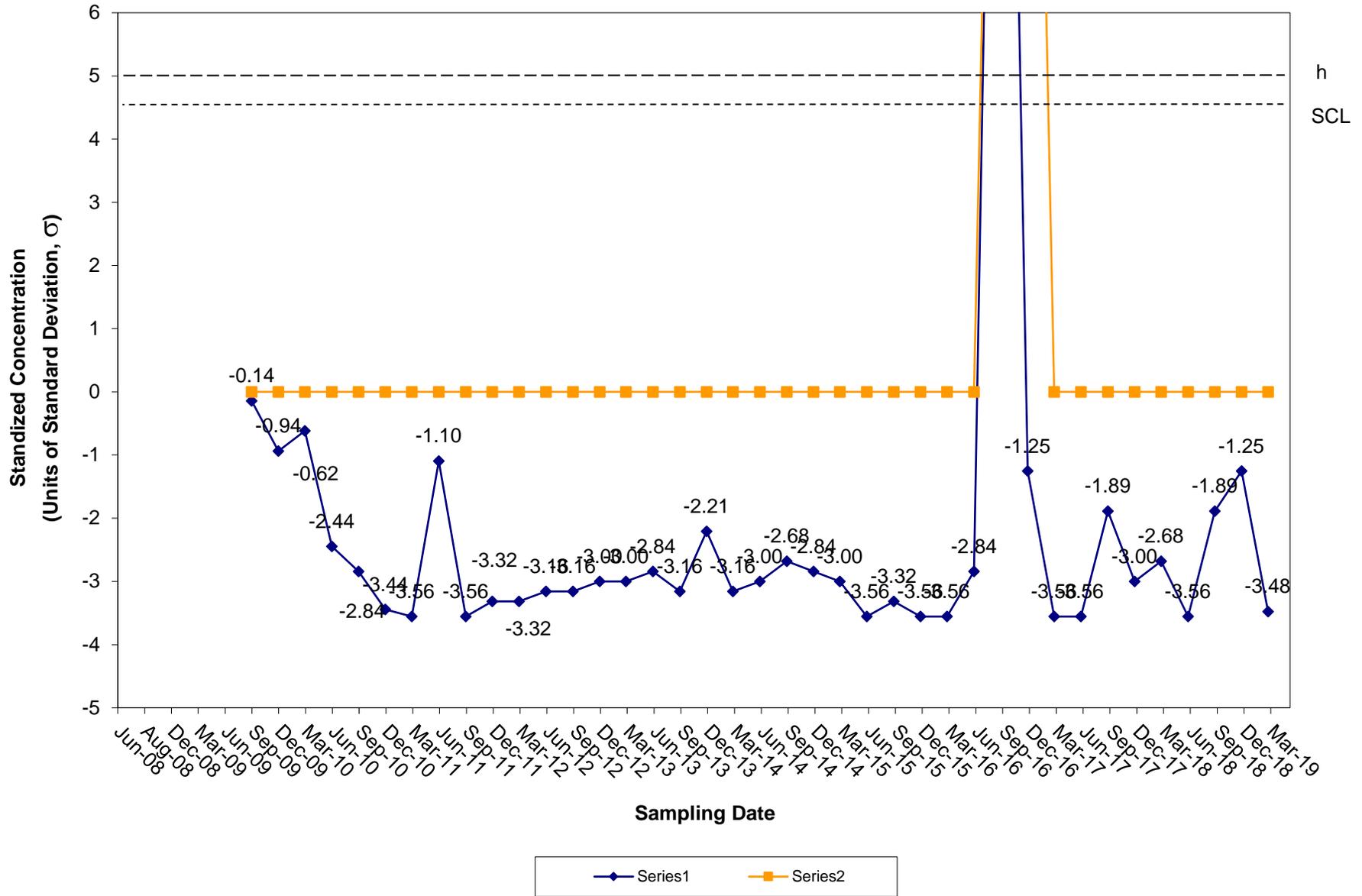
CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-15



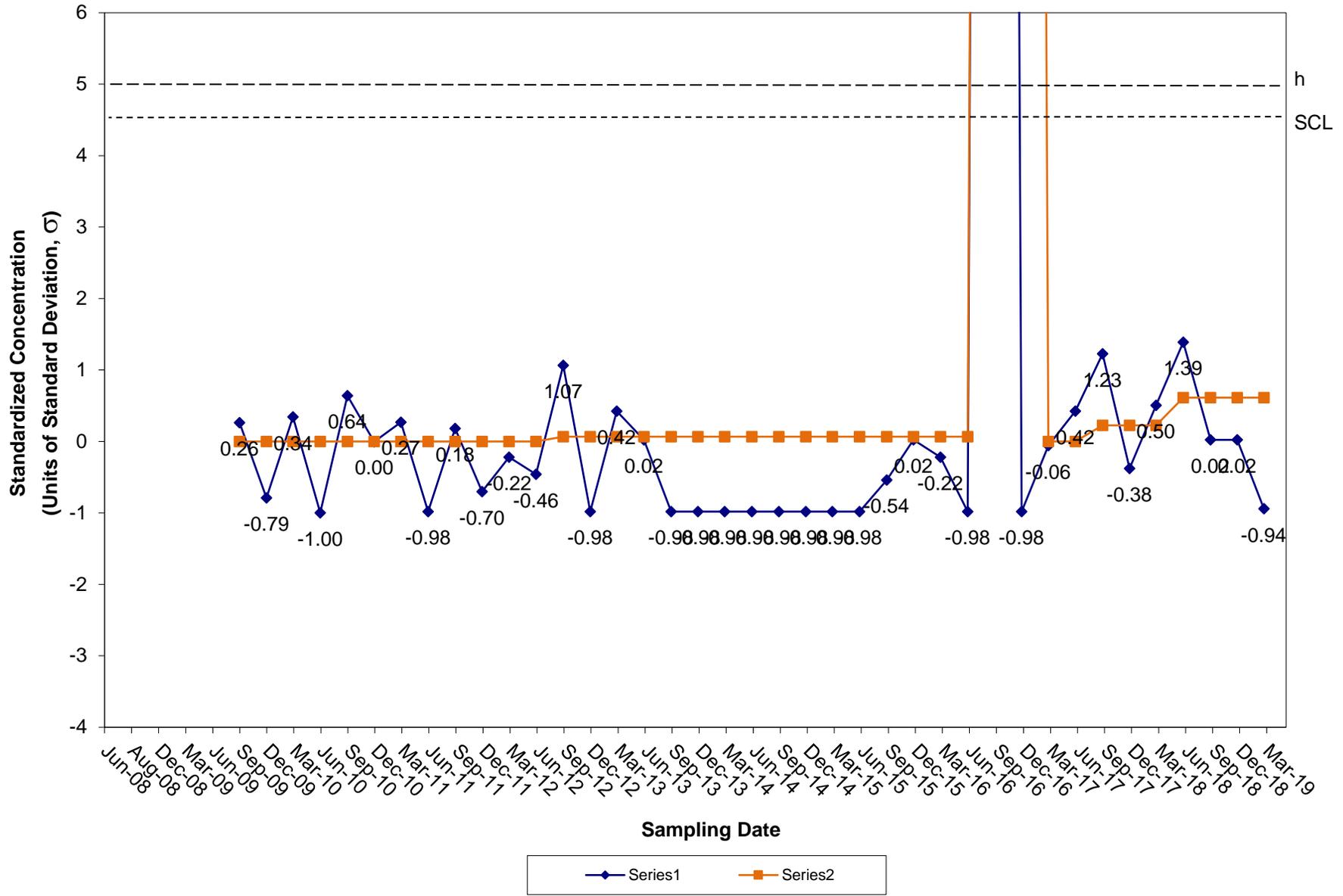
CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-15



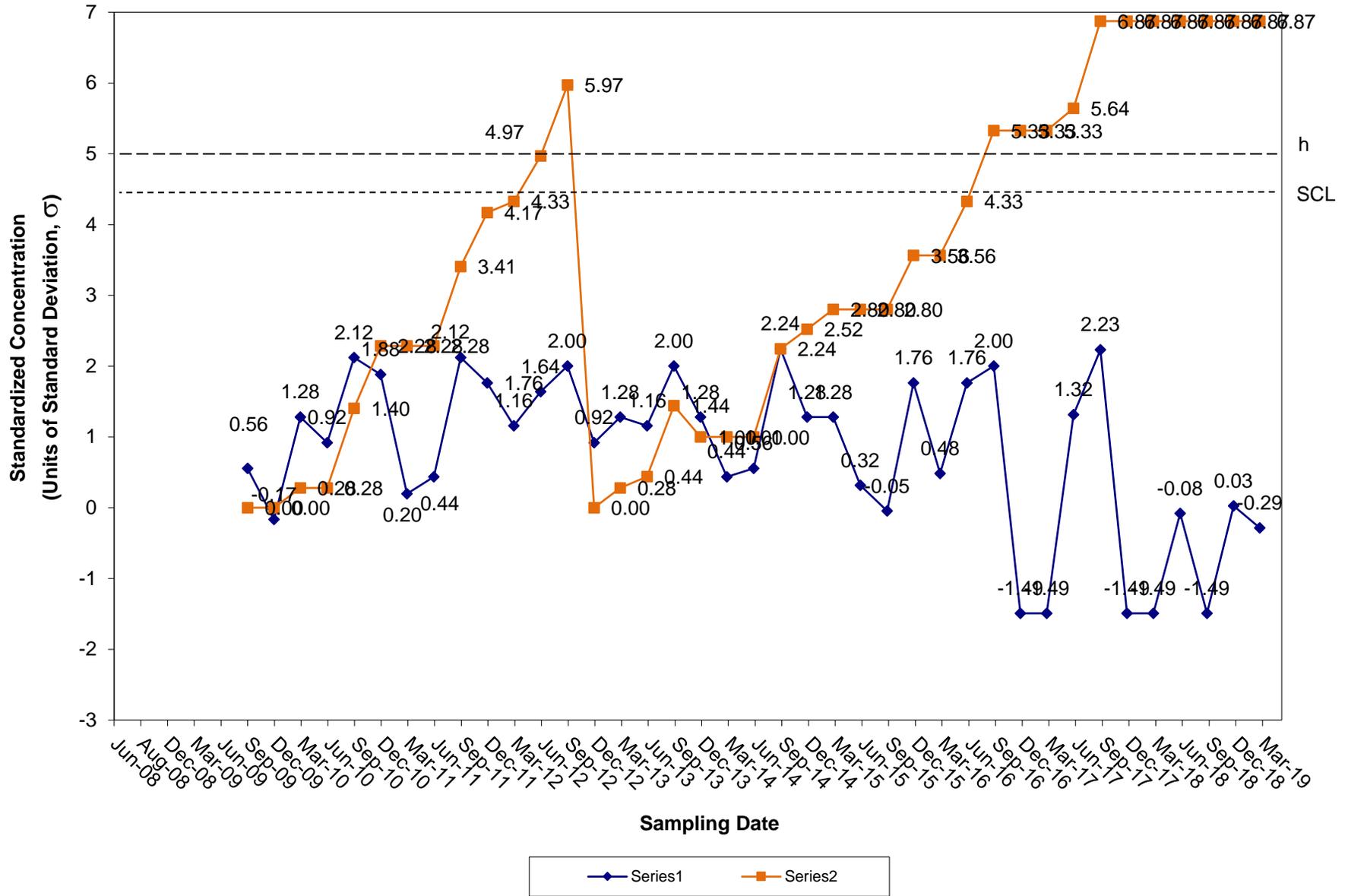
CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-15



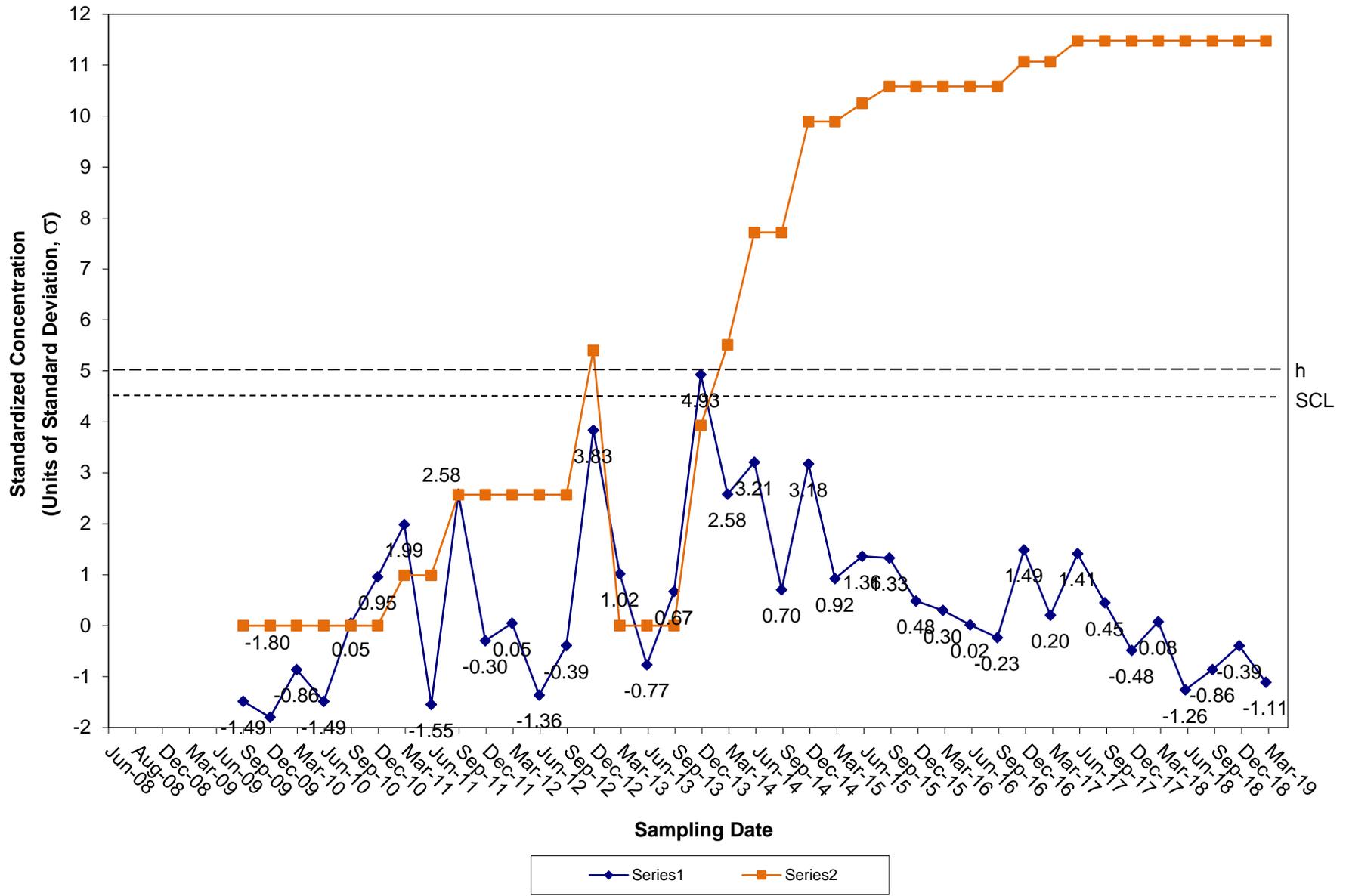
CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-15



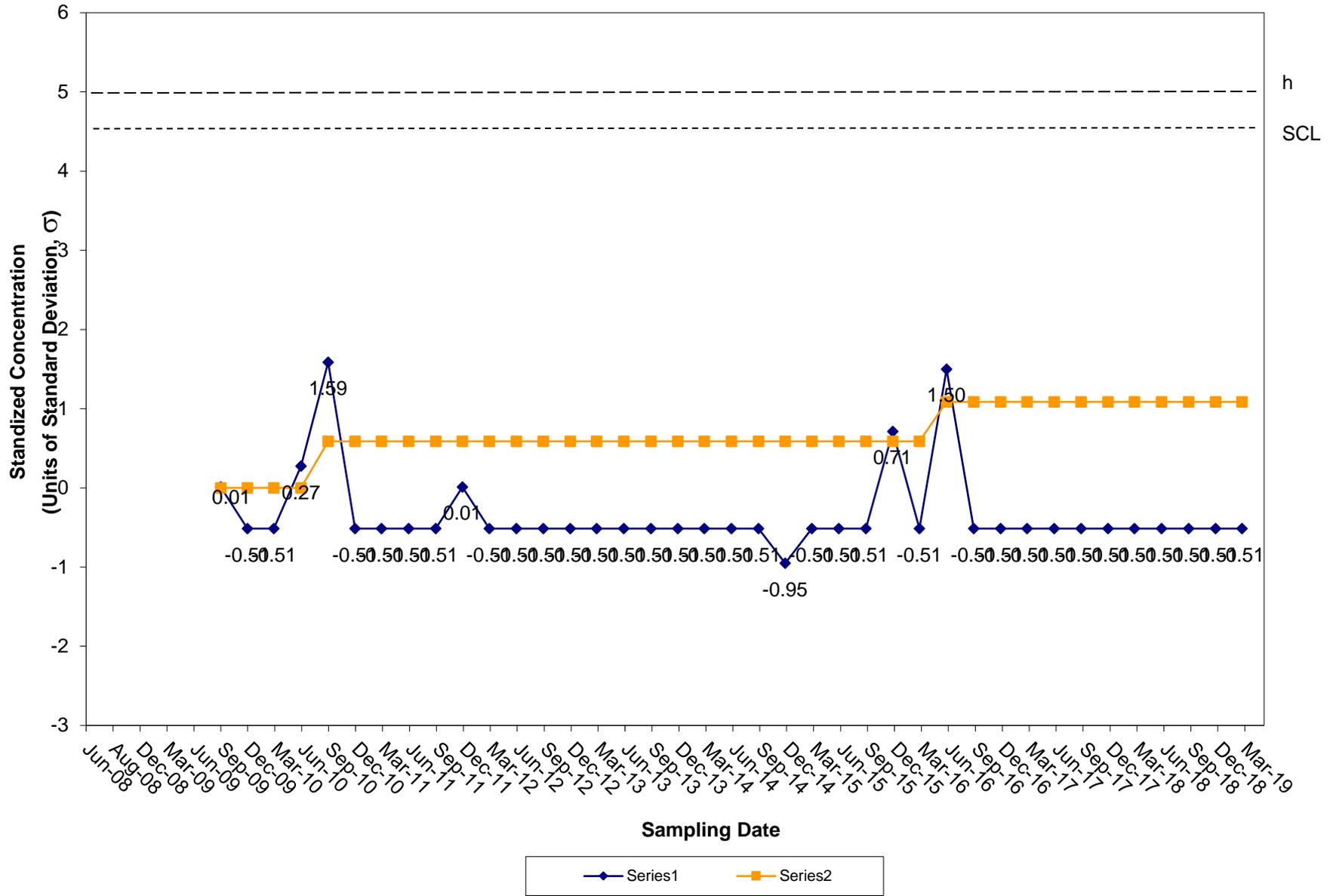
CUSUM Control Chart for Benzene Tiverton Landfill Groundwater Compliance Well OW-15



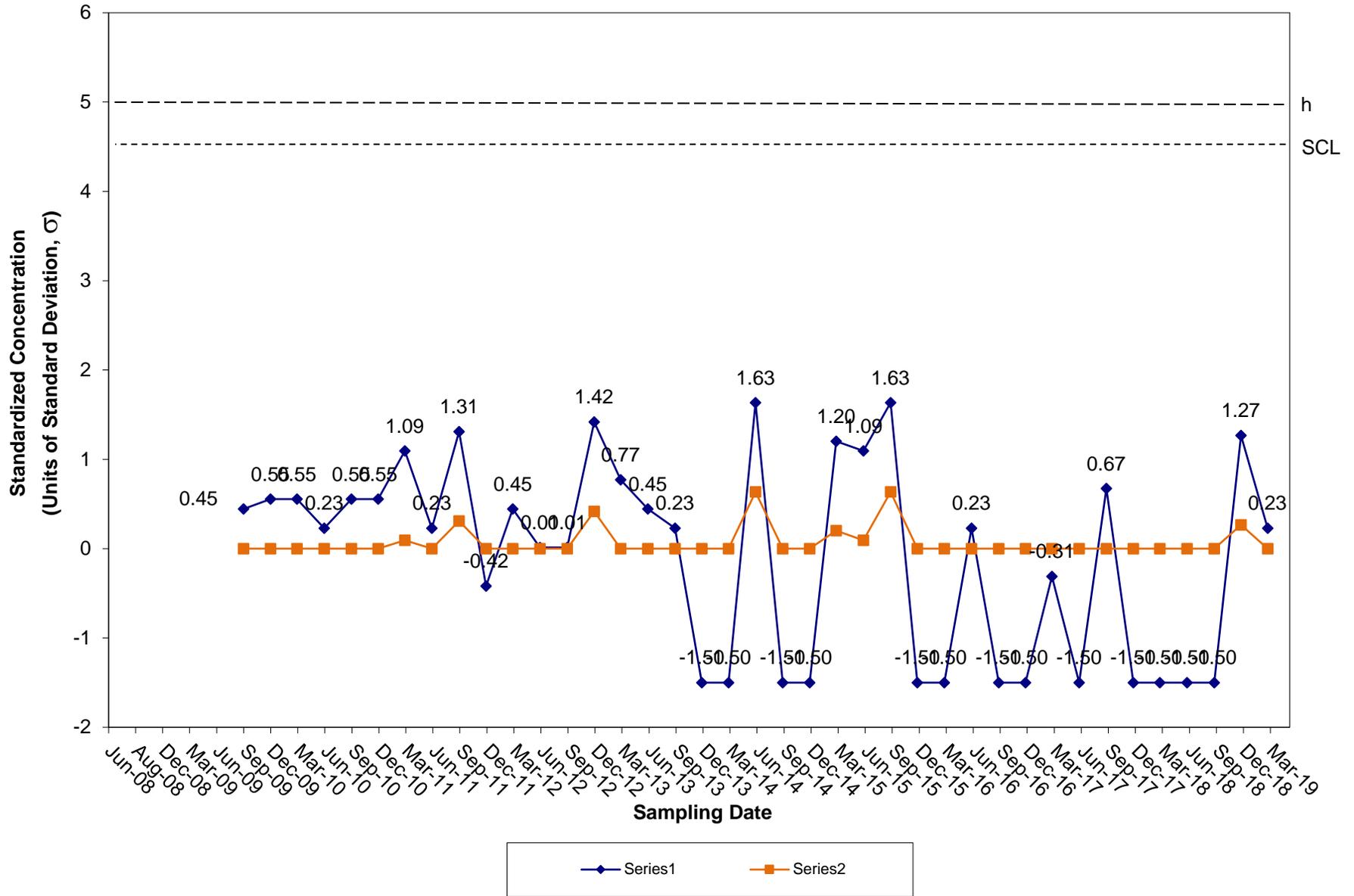
CUSUM Control Chart for Chlorobenzene Tiverton Landfill Groundwater Compliance Well OW-15



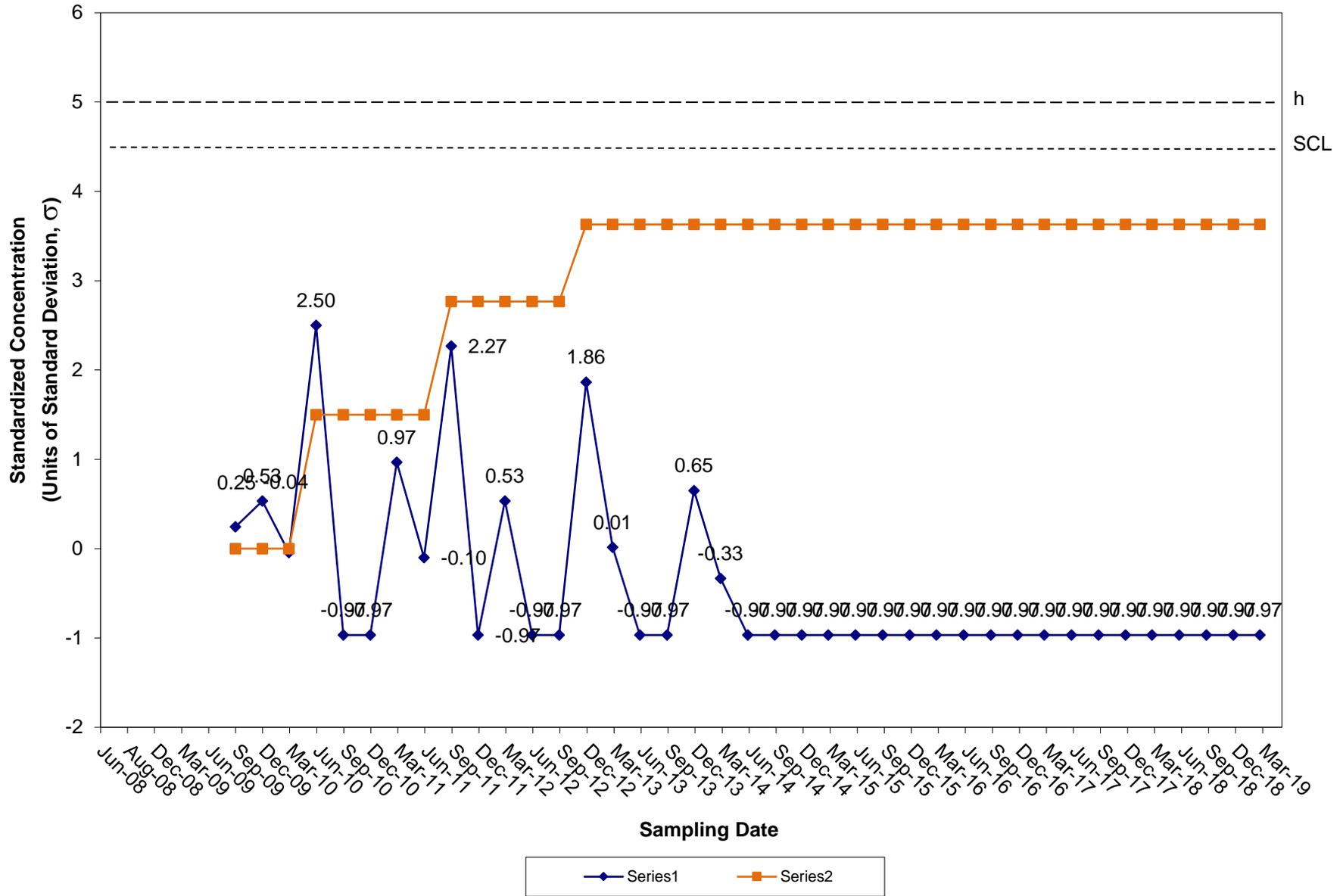
CUSUM Control Chart for Chloroethane Tiverton Landfill Groundwater Compliance Well OW-15



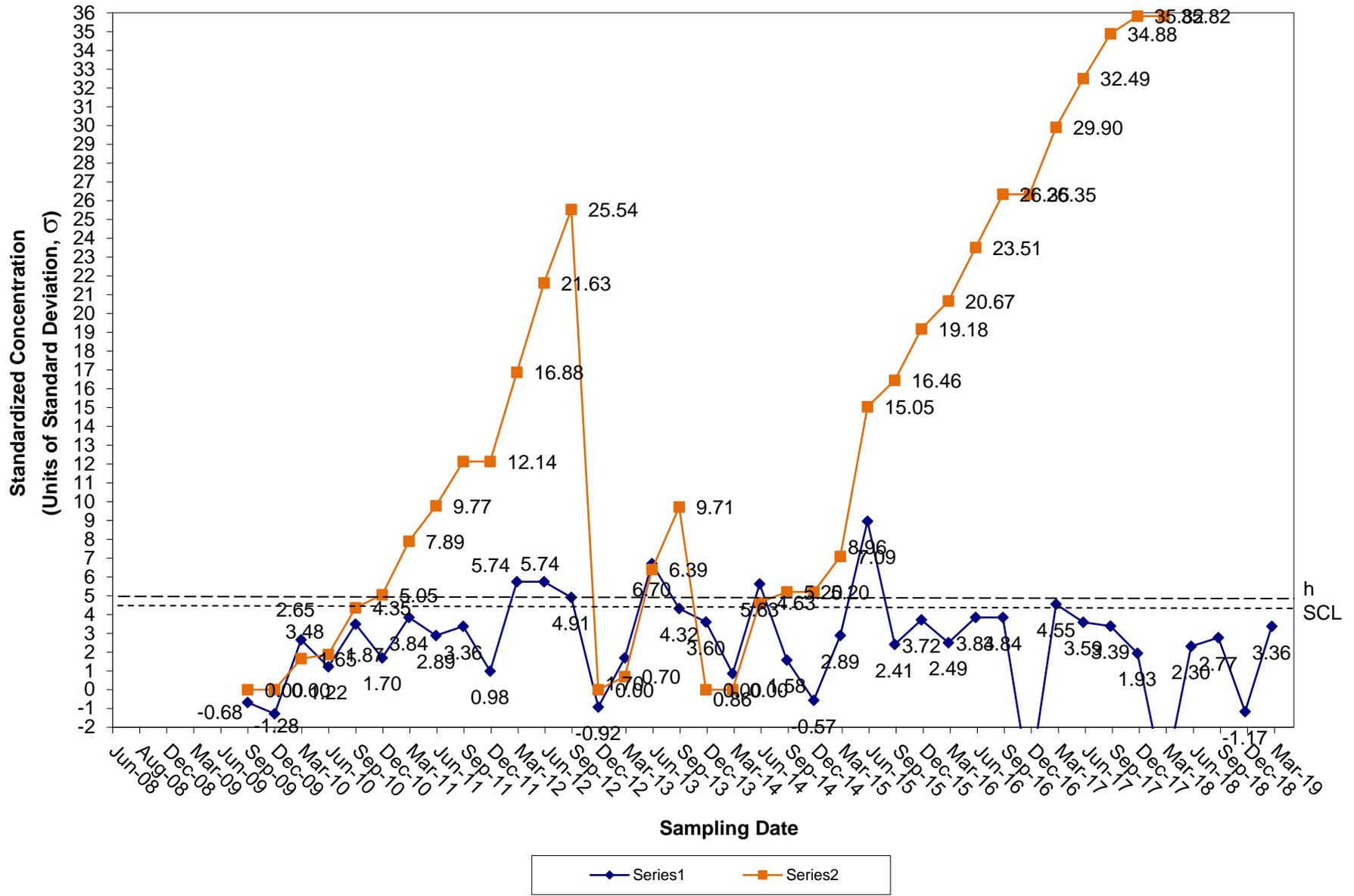
CUSUM Control Chart for 1,4-Dichlorobenzene Tiverton Landfill Groundwater Compliance Well OW-15



CUSUM Control Chart for Xylenes Tiverton Landfill Groundwater Compliance Well OW-15

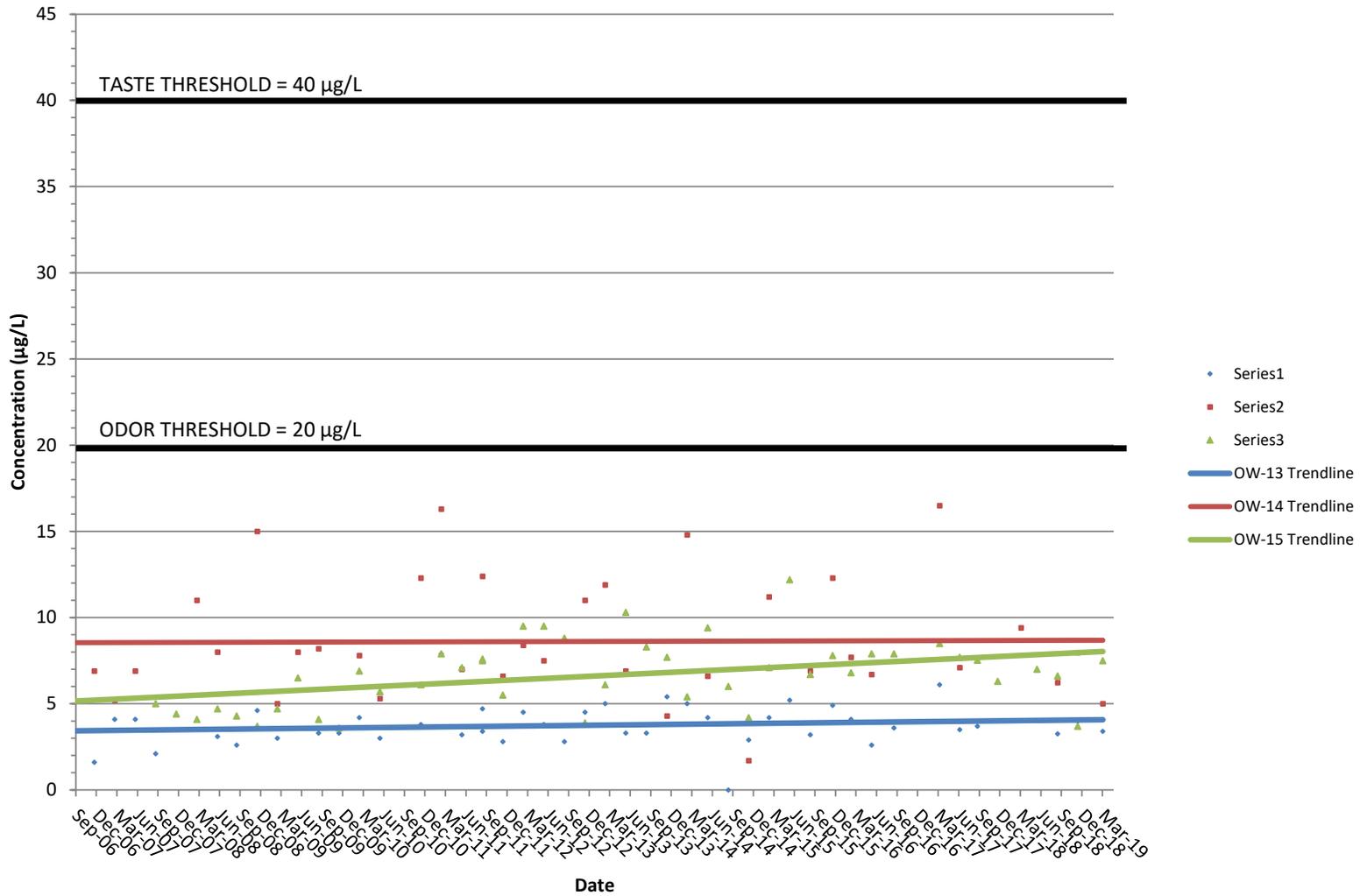


CUSUM Control Chart for MTBE Tiverton Landfill Groundwater Compliance Well OW-15



ATTACHMENT NO. 6
REPORTED CONCENTRATIONS OF MTBE FIGURE

Reported Concentrations of MTBE September 2006 - March 2019



ATTACHMENT NO. 7
FIELD SAMPLING DATA SHEETS

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

FIELD TESTING RESULTS:

SURFACE WATER LOCATION: SW-1

READING 1

pH: 6.71 pH UNITS
SPEC. COND: 0.72 mS/cm
TEMPERATURE: 5 °C

SURFACE WATER LOCATION: SW-2

READING 1

pH: 6.12 pH UNITS
SPEC. COND: 0.26 mS/cm
TEMPERATURE: 5.8 °C

SURFACE WATER LOCATION: SW-3

READING 1

pH: 6.13 pH UNITS
SPEC. COND: 0.60 mS/cm
TEMPERATURE: 6.2 °C

NOTES:

All surface water samples were clear with a brownish tinge.

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-9

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 16 feet
PURGE VOLUME (GAL): 0.6 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): N/A
ELAPSED TIME (MIN): N/A

WATER LEVEL DATA

DEPTH: 12.5 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	READING 2
pH:	<u>5.66</u> pH UNITS	<u>5.67</u> pH UNITS
SPEC. COND:	<u>0.145</u> mS/cm	<u>0.143</u> mS/cm
TEMPERATURE:	<u>9.9</u> °C	<u>9.8</u> °C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 11:30 AM.

Methane Reading (% LEL): 0

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-12

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 16.2 feet
PURGE VOLUME (GAL): 1.30 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): 0.2 +/-
ELAPSED TIME (MIN): 7 +/-

WATER LEVEL DATA

DEPTH: 2.3 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.18</u>	pH UNITS
SPEC. COND:	<u>0.545</u>	mS/cm
TEMPERATURE:	<u>9.2</u>	°C

	READING 2	
pH:	<u>6.18</u>	pH UNITS
SPEC. COND:	<u>0.536</u>	mS/cm
TEMPERATURE:	<u>9.1</u>	°C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 12:45 PM.

Methane Reading (% LEL): 0

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-13

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 14.5 feet
PURGE VOLUME (GAL): 1.80 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): 0.1 +/-
ELAPSED TIME (MIN): 15 +/-

WATER LEVEL DATA

DEPTH: 3.8 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.57</u>	pH UNITS
SPEC. COND:	<u>1.480</u>	mS/cm
TEMPERATURE:	<u>7.6</u>	°C

	READING 2	
pH:	<u>6.57</u>	pH UNITS
SPEC. COND:	<u>1.481</u>	mS/cm
TEMPERATURE:	<u>7.6</u>	°C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 5:00 PM.

Methane Reading (% LEL): 0

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-14

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 10.6 feet
PURGE VOLUME (GAL): 1.2 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): N/A
ELAPSED TIME (MIN): N/A

WATER LEVEL DATA

DEPTH: 3.6 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	READING 2
pH:	<u>6.5</u> pH UNITS	<u>6.5</u> pH UNITS
SPEC. COND:	<u>2.039</u> mS/cm	<u>2.046</u> mS/cm
TEMPERATURE:	<u>7.6</u> °C	<u>7.6</u> °C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of supernatant sampled after a 15-minute decanting period.

Samples were collected at 3:45 PM.

Methane Reading (% LEL): 0

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-15

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 16.8 feet
PURGE VOLUME (GAL): 1.6 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): 0.1 +/-
ELAPSED TIME (MIN): 15 +/-

WATER LEVEL DATA

DEPTH: 7 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.61</u>	pH UNITS
SPEC. COND:	<u>1.821</u>	mS/cm
TEMPERATURE:	<u>11.2</u>	°C

	READING 2	
pH:	<u>6.60</u>	pH UNITS
SPEC. COND:	<u>1.806</u>	mS/cm
TEMPERATURE:	<u>11.0</u>	°C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 4:30 PM.

Methane Reading (% LEL): 44

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-7

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 11.8 feet
PURGE VOLUME (GAL): 2.0 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): 0.1 +/-
ELAPSED TIME (MIN): 15 +/-

WATER LEVEL DATA

DEPTH: 0 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.49</u>	pH UNITS
SPEC. COND:	<u>1.023</u>	mS/cm
TEMPERATURE:	<u>8.2</u>	°C

	READING 2	
pH:	<u>6.49</u>	pH UNITS
SPEC. COND:	<u>1.026</u>	mS/cm
TEMPERATURE:	<u>8.3</u>	°C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 2:30 PM.

Methane Reading (% LEL): 0

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.24

DATE: 3/28/2019
WEATHER: Sunny 40s

WELL ID: OW-16

DIAMETER (INCHES): 2

PURGE DATA

WELL DEPTH: 45.8 feet
PURGE VOLUME (GAL): 7.3 gallons
PURGER TYPE: Peristaltic pump

MEASURE POINT: Top of Casing
PURGE RATE (GPM): 0.3 +/-
ELAPSED TIME (MIN): 20 +/-

WATER LEVEL DATA

DEPTH: 1.3 feet
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan
DEVICE: Water Level Indicator

FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.58</u>	pH UNITS
SPEC. COND:	<u>1.262</u>	mS/cm
TEMPERATURE:	<u>11.8</u>	°C

	READING 2	
pH:	<u>6.57</u>	pH UNITS
SPEC. COND:	<u>1.251</u>	mS/cm
TEMPERATURE:	<u>12.0</u>	°C

NOTES:

Samples were noted as generally clear and low in turbidity based on visual inspections of samples.

Samples were collected at 3:00 PM.

Methane Reading (% LEL): 0