



August 2, 2018

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**  
**2nd Quarter (June) 2018, 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 second quarterly monitoring round of Year 2018 from the Tiverton Landfill (Landfill). Pare Corporation (Pare) has prepared this report on behalf of the Town of Tiverton (Town). In the 2017 Annual Groundwater Monitoring Report, Pare recommended that overburden well OW-7 and bedrock well OW-16 be included in the groundwater monitoring program. As such, Pare conducted the groundwater sampling on June 7, 2018 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, plus the Appendix B metals mercury and tin, which are routinely included. 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,  $\pm 0.1$  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. Combustible gases were unable to be monitored at the Landfill in June 2018 due to a malfunction of the gas monitoring equipment at the time of sampling.

Recent sampling rounds have been during periods of dry conditions; as such, samples collected contained a high amount of silt and suspended particles. Reported concentrations of heavy metals were higher than usual, and the degree of suspended particles observed in the samples may have impacted heavy metal concentrations. Pare believes these results were an anomaly and not indicative of typical groundwater quality. Therefore, Pare

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updated the groundwater monitoring program in the 2016 Annual Groundwater Monitoring Report to include a 10-15 settling minute period for turbidity to drop out of suspension, before the sample is decanted and then stored in laboratory glassware with preservative. Additionally, during the March 2017 monitoring round, accumulated sediment in the bottom of wells at the Landfill was removed prior to sampling.

## **HUMAN HEALTH THRESHOLD EVALUATION**

Compliance Well OW-7 – Six (6) target metals were reported in the groundwater sample collected from OW-7. One (1) reported metal, arsenic (0.01 mg/L), was reported at its MCL (0.01 mg/L). 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. One (1) reported metal, arsenic (0.01 mg/L), was reported at its MCL (0.01 mg/L). No (0) target VOCs were reported above laboratory detection limits at OW-12.

Compliance Well OW-13 – Eight (8) target metals were reported in the groundwater sample collected from OW-13. One (1) reported metal, arsenic (0.02 mg/L), was reported above its MCL (0.01 mg/L). Two (2) target VOCs; chlorobenzene and MTBE; were reported above laboratory detection limits at OW-13.

Compliance Well OW-14 – Seven (7) target metals were reported in the groundwater sample collected from OW-14. Two (2) reported metals; arsenic (0.01 mg/L) and cadmium (0.006 mg/L); were reported at or above their MCLs (0.01 mg/L and 0.005 mg/L, respectively). Four (4) target VOCs; benzene, chlorobenzene, 1,4-dichlorobenzene 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-14.

Compliance Well OW-15 – Six (6) target metals were reported in the groundwater sample collected from OW-15. Two (2) reported metals; arsenic (0.03 mg/L) and cadmium (0.01 mg/L); exceeded their MCLs (0.01 mg/L and 0.005 mg/L, respectively). Three (3) target VOCs; benzene, 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-15.

Compliance Well OW-16 (new bedrock well) – Seven (7) target metals were reported in the groundwater sample collected from OW-16. One (1) reported metal, arsenic (0.01 mg/L), was reported at its MCL (0.01 mg/L). 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.

Background Well OW-9 – Five (5) 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.



## **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 September 2016, June 2017, and September 2017 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 2014. 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.

Three (3) of the metals concentration reported in June 2018; arsenic, barium and cobalt; exceeded the corresponding TLs calculated during this monitoring round in at least one compliance well. In total, there were ten (10) 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. Each of these metals is 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 and nickel at OW-12; and cadmium at OW-15; exceeded both of their Shewhart-CUSUM thresholds during the June 2018 monitoring round.

The dry conditions present during the September 2016 monitoring round were believed by Pare to have resulted in higher than usual suspended solids in samples collected, which are believed to have also resulted in atypical metals concentrations. As a result, the results of the Shewhart-CUSUM analysis for September 2016 were believed to be an anomaly. In many cases these deviations are outside of the statistical range expected. With the inception of the updated groundwater monitoring program, Pare has reset the Shewhart-CUSUM levels for several metals at multiple wells in order to have an accurate representation of cumulative statistical analysis of these constituents. The metals that have had their Shewhart-CUSUM thresholds reset include: chromium, lead, nickel, vanadium, and zinc at OW-12; barium, cadmium, cobalt, copper, lead, and vanadium at OW-13; zinc at OW-14; and arsenic, cadmium, chromium, cobalt, lead, nickel, vanadium, and zinc at OW-15. It should be noted that the reset of zinc at OW-14 is due to a statistical spike in the Shewhart-CUSUM limit during the September 2015 monitoring round (which was also sampled during dry conditions). These Shewhart-CUSUM parameters were reset prior to the March 2017 sampling round; therefore, data recorded from the March 2017 monitoring round is present in the analysis.



## **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-14 in the December 2017 monitoring round due to an exceedance of the Shewhart-CUSUM threshold of antimony in the June 2017 monitoring period. This Assessment Monitoring was delayed from September 2017 to December 2017 due to dry conditions in September, rendering a sample unattainable. One Appendix B parameter, sulfides (0.04 mg/L), was detected in the December 2017 monitoring round. In the 2017 Annual Groundwater Monitoring report, Pare recommended that groundwater samples from OW-14 in the March 2018 monitoring round be tested again for sulfides. Again, the Appendix B parameter sulfides (0.04 mg/L) was detected in the samples collected from OW-14 in March 2018.

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. Sulfides were not detected at OW-13 in the June 2018 monitoring round.

## **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, three (3) metals; arsenic, barium and cobalt; exceeded their tolerance limits (TLs) in at least one well. Arsenic and barium also exceeded their TLs during the previous monitoring round at OW-13 and OW-15, and OW-13, OW-14 and OW-15, respectively. TL exceedances in two consecutive monitoring rounds is one of the criteria used to consider introducing Assessment Monitoring in subsequent monitoring rounds.

Pare recommends that Assessment Monitoring be discontinued at OW-13 due to the lack of Appendix B parameters detected during the Assessment Monitoring performed in the June 2018 monitoring round. Additionally, Pare does not recommend Assessment Monitoring at the Landfill during the upcoming September 2018 monitoring round as the criteria to warrant Assessment Monitoring were not met in the June 2018 monitoring round.

During the 2016 and 2017 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. 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.

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. Pare recommends that sulfides be again tested for at OW-14 in the September 2018 monitoring round. Additionally, Pare recommends that the Town consider adding regular analysis of sulfides to the groundwater monitoring program.

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 June 2018 monitoring period marks the second 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.



Mr. Leo Hellested, P.E.

(6)

August 2, 2018

Samples have been unable to be collected at the background well OW-9 in recent monitoring rounds. Dating back to September 2016, three out of the last eight monitoring rounds have resulted in a dry well (although Pare was able to collect a sample in June 2018). The tolerance interval analysis is dependent on data collected from the background well; therefore, uncharacteristic TL exceedances may be a result of the lack of recent historical data from this well. Pare will be able to more accurately assess this potential changing trend in groundwater quality with more data collection from the background well.

Recent monitoring rounds also indicate there is an increasing trend of barium and cadmium in groundwater at the Landfill. However, Assessment Monitoring triggered by exceedances of barium and cadmium have resulted in no (0) detections of Appendix B parameters. Pare will continue to evaluate antimony, barium, cadmium, and sulfides trends at the Landfill in subsequent monitoring rounds.

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.  
Vice President

TPT/TCJ/abv

#### Attachments

cc: Jay Lambert, Tiverton Landfill Subcommittee (w/encl.)  
Jan Reitsma, Tiverton Town Administrator (w/encl.)  
Travis C. Johnson, Pare Corporation (w/o encl.)  
George G. Palmisciano, P.E. 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: 8F08028**  
**Client Project: 94139 - Tiverton Landfill**

Report Date: 15-June-2018

Prepared for:

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

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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 06/08/18. 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 8F08028. Custody records are included in this report.

<b>Lab ID</b>	<b>Sample</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
8F08028-01	OW-7	Water	06/07/2018	06/08/2018
8F08028-02	OW-9	Water	06/07/2018	06/08/2018
8F08028-03	OW-12	Water	06/07/2018	06/08/2018
8F08028-04	OW-14	Water	06/07/2018	06/08/2018
8F08028-05	OW-15	Water	06/07/2018	06/08/2018
8F08028-06	OW-16	Water	06/07/2018	06/08/2018

## ***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: 8F08028-03)**

<b><u>Analysis</u></b>	<b><u>Method</u></b>
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C
Cadmium	EPA 6010C
Chromium	EPA 6010C
Cobalt	EPA 6010C
Copper	EPA 6010C
Lead	EPA 6010C
Mercury	EPA 7470A
Nickel	EPA 6010C
Selenium	EPA 6010C
Silver	EPA 6010C
Thallium	EPA 7010
Tin	EPA 6010C
Vanadium	EPA 6010C
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 6010C

### **OW-14 (Lab Number: 8F08028-04)**

<b><u>Analysis</u></b>	<b><u>Method</u></b>
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C
Cadmium	EPA 6010C
Chromium	EPA 6010C
Cobalt	EPA 6010C
Copper	EPA 6010C
Lead	EPA 6010C
Mercury	EPA 7470A
Nickel	EPA 6010C
Selenium	EPA 6010C
Silver	EPA 6010C
Thallium	EPA 7010
Tin	EPA 6010C
Vanadium	EPA 6010C
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 6010C

### **OW-15 (Lab Number: 8F08028-05)**

<b><u>Analysis</u></b>	<b><u>Method</u></b>
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C

## ***Request for Analysis (continued)***

### **OW-15 (Lab Number: 8F08028-05) (continued)**

#### **Analysis**

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

#### **Method**

EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 7470A  
EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 7010  
EPA 6010C  
EPA 6010C  
EPA 8260C  
EPA 6010C

### **OW-16 (Lab Number: 8F08028-06)**

#### **Analysis**

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

#### **Method**

EPA 6010C  
EPA 7470A  
EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 7010  
EPA 6010C  
EPA 6010C  
EPA 8260C  
EPA 6010C

## ***Request for Analysis (continued)***

### **OW-7 (Lab Number: 8F08028-01)**

#### **Analysis**

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

#### **Method**

EPA 6010C  
EPA 7470A  
EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 7010  
EPA 6010C  
EPA 6010C  
EPA 8260C  
EPA 6010C

### **OW-9 (Lab Number: 8F08028-02)**

#### **Analysis**

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

#### **Method**

EPA 6010C  
EPA 7470A  
EPA 6010C  
EPA 6010C  
EPA 6010C  
EPA 7010  
EPA 6010C  
EPA 6010C  
EPA 8260C  
EPA 6010C

### ***Method References***

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

## 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.

Sample: OW-7

Case Number: 8F08028

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.001
7440-38-2	Arsenic	6010C	0.01	0.002
7440-39-3	Barium	6010C	0.028	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	ND	0.001
7440-47-3	Chromium	6010C	0.004	0.001
7440-48-4	Cobalt	6010C	0.015	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.018	0.001
7782-49-2	Selenium	6010C	ND	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.014	0.005

ND = Not Detected

Sample: OW-9

Case Number: 8F08028

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.001
7440-38-2	Arsenic	6010C	ND	0.002
7440-39-3	Barium	6010C	0.009	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	ND	0.001
7440-47-3	Chromium	6010C	0.003	0.001
7440-48-4	Cobalt	6010C	ND	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	6010C	0.001	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	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.009	0.005

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	0.001	0.001
7440-38-2	Arsenic	6010C	0.01	0.002
7440-39-3	Barium	6010C	0.020	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	ND	0.001
7440-47-3	Chromium	6010C	ND	0.001
7440-48-4	Cobalt	6010C	ND	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	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	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.009	0.005

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.001
7440-38-2	Arsenic	6010C	0.01	0.002
7440-39-3	Barium	6010C	0.155	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	0.006	0.001
7440-47-3	Chromium	6010C	0.001	0.001
7440-48-4	Cobalt	6010C	0.006	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.012	0.001
7782-49-2	Selenium	6010C	ND	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.031	0.005

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	ND	0.001
7440-38-2	Arsenic	6010C	0.03	0.002
7440-39-3	Barium	6010C	0.096	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	0.010	0.001
7440-47-3	Chromium	6010C	ND	0.001
7440-48-4	Cobalt	6010C	0.012	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.023	0.001
7782-49-2	Selenium	6010C	ND	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.032	0.005

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	0.002	0.001
7440-38-2	Arsenic	6010C	0.01	0.002
7440-39-3	Barium	6010C	0.011	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	ND	0.001
7440-47-3	Chromium	6010C	0.004	0.001
7440-48-4	Cobalt	6010C	0.002	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	6010C	ND	0.001
7439-97-6	Mercury	7470A	ND	0.0002
7440-02-0	Nickel	6010C	0.009	0.001
7782-49-2	Selenium	6010C	ND	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.022	0.005

ND = Not Detected

Sample: OW-7  
Method: 8260C

Case Number: 8F08028

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: 8F08028

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	3.56	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	95.2	70-130
1,2-Dichloroethane d4	94.1	70-130
4 BFB	93.5	70-130

ND = Not Detected

Sample: OW-9  
Method: 8260C

Case Number: 8F08028

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: 8F08028

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	96.9	70-130
1,2-Dichloroethane d4	99.2	70-130
4 BFB	89.8	70-130

ND = Not Detected

Sample: OW-12  
Method: 8260C

Case Number: 8F08028

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: 8F08028

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	96.8	70-130
1,2-Dichloroethane d4	97.5	70-130
4 BFB	89.2	70-130

ND = Not Detected

Sample: OW-14  
Method: 8260C

Case Number: 8F08028

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	2.77	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	13.3	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: 8F08028

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	2.62	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	6.23	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	95.8	70-130
1,2-Dichloroethane d4	96.7	70-130
4 BFB	94.9	70-130

ND = Not Detected

Sample: OW-15  
Method: 8260C

Case Number: 8F08028

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	1.67	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	12.72	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: 8F08028

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	6.61	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	95.8	70-130
1,2-Dichloroethane d4	94.9	70-130
4 BFB	98.9	70-130

ND = Not Detected

Sample: OW-16  
Method: 8260C

Case Number: 8F08028

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: 8F08028

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	6.53	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	94.6	70-130
1,2-Dichloroethane d4	95.5	70-130
4 BFB	90.7	70-130

ND = Not Detected

NEW ENGLAND TESTING LABORATORY, INC.  
 59 Greenhill Street  
 West Warwick, RI 02893  
 1-888-863-8522

CHAIN OF CUSTODY RECORD



PROJ. NO.	PROJECT NAME/LOCATION	CLIENT	SCORING				PRESERVATIVE	REMARKS		
			SCORE	SOIL	OTHER	NO. OF CONTAINERS				
94139.24	TIVERTON LANDFILL	PARE CORPORATION								
REPORT TO:	Johnson@parecorp.com									
INVOICE TO:	ACCOUNTING									
DATE	TIME	COMPA	GRA B	SAMPLE I.D.	SCORE	SOIL	OTHER	NO. OF CONTAINERS	PRESERVATIVE	REMARKS
6/7		Y		OW-7	Y			3	AMP <sub>24</sub> HCL	
				OW-9						
				OW-12						
				<del>OW-13</del>						
				OW-14						
				OW-15						
				OW-16						

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Laboratory Remarks:	Special Instructions:
<i>[Signature]</i>	6/8 12:00	<i>[Signature]</i>		Temp. received: <u>0</u> Cooled <input type="checkbox"/>	List Specific Detection Limit Requirements:
<i>[Signature]</i>	6/8 12:45	<i>[Signature]</i>	6-8 12:45		
<i>[Signature]</i>	6-8 13:00	<i>[Signature]</i>	6-8-18 13:00		Turnaround (Business Days)

\*\*Netlab subcontractors the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH



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

## REPORT OF ANALYTICAL RESULTS

**NETLAB Work Order Number: 8F08027**  
**Client Project: 94139 - Tiverton Landfill**

Report Date: 15-June-2018

Prepared for:

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

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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 06/08/18. 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 8F08027. Custody records are included in this report.

<b>Lab ID</b>	<b>Sample</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
8F08027-01	OW-13	Water	06/07/2018	06/08/2018

## ***Request for Analysis***

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

### **OW-13 (Lab Number: 8F08027-01)**

<b><u>Analysis</u></b>	<b><u>Method</u></b>
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C
Cadmium	EPA 6010C
Chromium	EPA 6010C
Cobalt	EPA 6010C
Copper	EPA 6010C
Cyanide	SM4500-CN-E
Herbicides	EPA 8151A
Lead	EPA 6010C
Mercury	EPA 7470A
Nickel	EPA 6010C
PCBs	EPA 8082A
Pesticides	EPA 8081B
Selenium	EPA 6010C
Semivolatile Organic Compounds	EPA 8270D
Silver	EPA 6010C
Sulfide	SM4500-S-D
Thallium	EPA 7010
Tin	EPA 6010C
Vanadium	EPA 6010C
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 6010C

## ***Method References***

*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*

## 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.

### Herbicides

All samples were extracted and 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.

### PCBs

All samples were extracted and 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.

### Pesticides

All samples were extracted and 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.

### Semi-volatile Compounds

All samples were extracted and 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.

### 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-13

Case Number: 8F08027

<b>CAS RN</b>	<b>Common Name</b>	<b>Method</b>	<b>Result, ppm</b>	<b>PQL (ppm)</b>
57-12-5	Cyanide	9014	ND	0.01
18496-25-8	Sulfide	376.2	ND	0.01

ND = Not Detected

CAS RN	Common Name	Method	Result, ppm	PQL (ppm)
7440-36-0	Antimony	6010C	0.002	0.001
7440-38-2	Arsenic	6010C	0.02	0.002
7440-39-3	Barium	6010C	0.089	0.001
7440-41-7	Beryllium	6010C	ND	0.001
7440-43-9	Cadmium	6010C	0.004	0.001
7440-47-3	Chromium	6010C	0.002	0.001
7440-48-4	Cobalt	6010C	0.011	0.001
7440-50-8	Copper	6010C	ND	0.005
7439-92-1	Lead	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	0.002
7440-22-44	Silver	6010C	ND	0.001
7440-28-0	Thallium	6010C	ND	0.0002
7440-34-5	Tin	6010C	ND	0.002
7440-62-2	Vanadium	7010	ND	0.001
7440-66-6	Zinc	6010C	0.012	0.005

ND = Not Detected

Sample: OW-13

Case Number: 8F08027

Method: 8151A

CAS RN	Common Name	Result, ppb	PQL (ppb)
93-76-5	2,4,5-T	ND	1.0
94-75-7	2,4-D	ND	1.0
88-85-7	Dinoseb	ND	1.0
93-72-1	Silvex (2,4,5-TP)	ND	1.0

**Surrogates:**

Compound	% Recovery	Limits
DCMA	106	30-150

Method: 8081B & 8082A

CAS RN	Common Name	Result, ppb	PQL (ppb)
72-54-8	4,4'-DDD	ND	0.02
72-55-9	4,4'-DDE	ND	0.02
50-29-3	4,4'-DDT	ND	0.02
309-00-2	Aldrin	ND	0.02
319-84-6	alpha-BHC	ND	0.02
319-85-7	beta-BHC	ND	0.02
319-86-8	delta-BHC	ND	0.02
60-57-1	Dieldrin	ND	0.02
959-98-8	Endosulfan I	ND	0.02
33213-65-9	Endosulfan II	ND	0.02
1031-07-8	Endosulfan sulfate	ND	0.02
72-20-8	Endrin	ND	0.02
7421-93-4	Endrin aldehyde	ND	0.02
58-89-9	gamma-BHC (Lindane)	ND	0.02
76-44-8	Heptachlor	ND	0.02
1024-57-3	Heptachlor epoxide	ND	0.02
72-43-5	Methoxychlor	ND	0.02
8001-35-2	Toxaphene (chlorinated camphene)	ND	0.50
	Polychlorinated biphenyls (PCBs)	ND	0.2

**Surrogates:**

Compound	% Recovery	Limits
TCMX	54.8	30-129
DCMP	74.1	30-126

ND = Not Detected

Sample: OW-13  
Method: 8270

Case Number: 8F08027

CAS RN	Common Name	Result, ppb	PQL (ppb)
126-68-1	<i>0,0,0-Triethyl phosphorothioate</i>	ND	4.0
95-94-3	<i>1,2,4,5-Tetrachlorobenzene</i>	ND	4.0
20-82-1	1,2,4-Trichlorobenzene	ND	4.0
130-15-4	<i>1,4-Naphthoquinone</i>	ND	4.0
134-32-7	<i>1-Naphthylamine</i>	ND	4.0
58-90-2	<i>2,3,4,6-Tetrachlorophenol</i>	ND	4.0
95-95-4	2,4,5-Trichlorophenol	ND	4.0
88-06-2	2,4,6-Trichlorophenol	ND	2.0
120-83-2	2,4-Dichlorophenol	ND	2.0
105-67-9	<i>2,4-Dimethylphenol (m-Xylenol)</i>	ND	2.0
51-28-5	2,4-Dinitrophenol	ND	2.0
121-14-2.	2,4-Dinitrotoluene	ND	4.0
87-65-0	2,6-Dichlorophenol	ND	4.0
606-20-2	2,6-Dinitrotoluene	ND	4.0
53-96-3	<i>2-Acetylaminofluorene (2-AAF)</i>	ND	8.0
91-58-7	2-Chloronaphthalene	ND	4.0
95-57-8	2-Chlorophenol	ND	2.0
91-57-6	2-Methylnaphthalene	ND	4.0
91-59-8	<i>2-Naphthylamine</i>	ND	4.0
91-94-1	3,3'-Dichlorobenzidine	ND	8.0
119-93-7	<i>3,3'-Dimethylbenzidine</i>	ND	4.0
56-49-5	<i>3-Methylcholanthrene</i>	ND	4.0
534-52-1	4,6-Dinitro-o-cresol	ND	20.0
92-67-1	<i>4-Aminobiphenyl</i>	ND	8.0
101-55-3	4-Bromophenyl phenyl ether	ND	4.0
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.0
99-55-8	<i>5-Nitro-o-toluidine</i>	ND	4.0
57-97-6	<i>7,12-Dimethylbenz[a]anthracene</i>	ND	4.0
83-32-9	Acenaphthene	ND	4.0
208-96-8	Acenaphthylene	ND	4.0
98-86-2	<i>Acetophenone</i>	ND	4.0
120-12-7	Anthracene	ND	4.0
56-55-3	Benzo[a]anthracene (Benzanthracene)	ND	4.0
50-32-8	Benzo[a]pyrene	ND	4.0
205-99-2	Benzo[b]fluoranthene	ND	4.0
191-24-2	Benzo[ghi]perylene	ND	4.0
207-08-9	Benzo[k]fluoranthene	ND	4.0
100-51-6	Benzyl alcohol	ND	8.0
111-91-1	Bis(2-chloroethoxy)methane	ND	2.0
111-44-4	Bis(2-chloroethyl) ether	ND	2.0
108-60-1	Bis-(2-chloroisopropyl) ether	ND	4.0
117-81-7	Bis(2-ethylhexyl) phthalate	ND	8.0

Sample: OW-13

Case Number: 8F08027

Method: 8270

CAS RN	Common Name	Result, ppb	PQL (ppb)
85-68-7	Butyl benzyl phthalate	ND	2.0
	<i>Chlordane (technical)</i>	ND	20.0
510-15-6	<i>Chlorobenzilate</i>	ND	4.0
218-01-9	Chrysene	ND	4.0
2303-16-4	<i>Diallate</i>	ND	4.0
53-70-3	Dibenz[a,h]anthracene	ND	4.0
132-64-9	Dibenzofuran	ND	4.0
84-66-2	Diethyl phthalate	ND	2.0
60-51-5	<i>Dimethoate</i>	ND	8.0
131-11-3	Dimethyl phthalate	ND	2.0
84-74-2	Di-n-butyl phthalate	ND	2.0
117-84-0	Di-n-octyl phthalate	ND	4.0
122-39-4	<i>Diphenylamine</i>	ND	4.0
298-04-4	<i>Disulfoton</i>	ND	4.0
62-50-0	<i>Ethyl methanesulfonate</i>	ND	8.0
52-85-7	<i>Famphur</i>	ND	8.0
206-44-0	Fluoranthene	ND	4.0
86-73-7	Fluorene	ND	4.0
118-74-1	Hexachlorobenzene	ND	4.0
87-68-3	Hexachlorobutadiene	ND	4.0
77-47-4	Hexachlorocyclopentadiene	ND	4.0
67-72-1	Hexachloroethane	ND	4.0
1888-71-7	Hexachloropropene	ND	4.0
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.0
78-59-1	Isophorone	ND	4.0
120-58-1	<i>Isosafrole</i>	ND	4.0
143-50-0	<i>Kepone</i>	ND	8.0
108-39-4	m-Cresol (3-methylphenol)	ND	4.0
99-65-0	<i>m-Dinitrobenzene</i>	ND	8.0
91-80-5	<i>Methapyrilene</i>	ND	40.0
66-27-3	<i>Methyl methanesulfonate</i>	ND	4.0
298-00-0	<i>Methyl parathion</i>	ND	4.0
99-09-2	m-Nitroaniline (3-Nitroaniline)	ND	2.0
91-20-3	Naphthalene	ND	2.0
98-95-3	Nitrobenzene	ND	4.0
55-18-5	N-Nitrosodiethylamine	ND	8.0
62-75-9	N-Nitrosodimethylamine	ND	2.0
924-16-3	<i>N-Nitrosodi-n-butylamine</i>	ND	4.0
86-30-6	N-Nitrosodiphenylamine	ND	2.0
621-64-7	N-Nitrosodipropylamine	ND	4.0
10595-95-6	<i>N-Nitrosomethylethalamine</i>	ND	4.0
100-75-4	<i>N-Nitrosopiperidine</i>	ND	8.0

Sample: OW-13

Case Number: 8F08027

Method: 8270

CAS RN	Common Name	Result, ppb	PQL (ppb)
930-55-2	<i>N-Nitrosopyrrolidine</i>	ND	10.0
95-48-7	o-Cresol (2-methylphenol)	ND	4.0
88-74-4	o-Nitroaniline (2-Nitroaniline)	ND	2.0
88-75-5	o-Nitrophenol (2-Nitrophenol)	ND	2.0
95-53-4	<i>o-Toluidine</i>	ND	4.0
60-11-7	<i>p-(Dimethylamino)azobenzene</i>	ND	4.0
56-38-2	Parathion	ND	4.0
106-47-8	p-Chloroaniline	ND	8.0
59-50-7	p-Chloro-m-cresol	ND	2.0
106-44-5	p-Cresol; 4-methylphenol	ND	4.0
608-93-5	<i>Pentachlorobenzene</i>	ND	4.0
82-68-8	<i>Pentachloronitrobenzene</i>	ND	8.0
87-86-5	Pentachlorophenol	ND	2.0
62-44-2	<i>Phenacetin</i>	ND	8.0
85-01-8	Phenanthrene	ND	4.0
108-95-2	Phenol	ND	1.0
298-02-2	<i>Phorate</i>	ND	4.0
100-01-6	p-Nitroaniline ( 4-Nitroaniline)	ND	8.0
100-02-7	p-Nitrophenol (4-Nitrophenol)	ND	4.0
106-50-3	<i>p-Phenylenediamine</i>	ND	4.0
23950-58-5	<i>Pronamide</i>	ND	4.0
129-00-0	Pyrene	ND	4.0
94-59-7	<i>Safrole</i>	ND	4.0
99-35-4	<i>sym-Trinitrobenzene</i>	ND	4.0
297-97-2	<i>Thionazin</i>	ND	8.0

**Surrogates:**

Compound	% Recovery	Limits
Nitrobenzene d5	86	30-130
2-Fluorobiphenyl	96	30-123
p-Terphenyl d14	123	30-130
Phenol d6	22	10-83
2,4,6-Tribromophenol	119	18-120
2-Fluorophenol	30	10-81

ND = Not Detected

Sample: OW-13  
Method: 8260C

Case Number: 8F08027

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	4.72	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: 8F08027

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	3.26	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	96.6	70-130
1,2-Dichloroethane d4	99.6	70-130
4 BFB	92.0	70-130

ND = Not Detected



**ATTACHMENT NO. 2**  
**ANALYTICAL SUMMARY TABLES**



**TABLE 1 (CONT.)**  
**SUMMARY OF GROUNDWATER MONITORING RESULTS**  
**APPENDIX A - CONSTITUENTS FOR DETECTION MONITORING**  
**MONITORING WELL OW-7**

Concentration (expressed in same units as Threshold Value)

Parameter	Threshold Value	Monitoring Results																						
		JUN '18	MAR '16	NOV '17	SEP '17	MAR '17	MAR '16	SEP '15	MAR '15	DEC '14	MAR '14	SEP '13	MAR '13	SEP '12	MAR '12	JUN '11	MAR '11	SEP '10	JUN '10	SEP '09	JUN '07	SEP '05	JUN '05	
Antimony	0.006 mg/L <sup>1</sup>	ND	ND	ND	ND	0.0070	ND	ND	ND	NT	ND	ND	ND	ND	0.0250	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	0.01 mg/L <sup>1</sup>	0.0100	ND	ND	ND	ND	0.0070	ND	ND	NT	ND	ND	ND	ND	ND	ND <sup>6</sup>	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2 mg/L <sup>1</sup>	0.0280	0.0380	0.0350	0.0330	0.0380	0.0390	0.0300	0.0330	NT	0.0310	0.0200	0.0310	0.0260	0.0350	0.0398	0.0375	0.0370	0.0310	0.0340	0.0240	0.0240	0.0280	0.0280
Beryllium	0.004 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND <sup>6</sup>	ND <sup>6</sup>	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.005 mg/L <sup>1</sup>	ND	ND	ND	ND	0.0010	ND	0.0010	ND	0.0010	ND	ND	0.0050	ND	ND	0.0012	0.0419	0.0410	ND	ND	ND	ND	ND	ND
Chromium	0.1 mg/L <sup>1</sup>	0.0040	0.0050	0.0050	0.0040	0.0060	ND	ND	ND	NT	ND	ND	ND	0.0010	0.0080	ND	0.0054	0.0048	0.0530	0.0530	ND	ND	ND	ND
Cobalt	0.73 mg/L <sup>5</sup>	0.0150	0.0190	0.0180	0.0180	0.0250	0.0280	0.0200	0.0250	NT	0.0220	0.0130	0.0250	0.0160	0.0200	0.0353	0.0229	0.0250	0.0250	0.0200	0.0190	0.0190	0.0220	0.0220
Copper	1.3 mg/L <sup>1</sup>	ND	ND	0.0050	ND	0.0060	0.0060	0.0080	0.0250	NT	0.0180	0.0040	ND	0.0080	0.0040	0.0390	0.0056	0.2180	5.0000	0.0058	0.0098	ND	ND	ND
Lead	0.015 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	ND	0.0010	0.0050	NT	0.0060	0.0040	0.0020	0.0040	0.0460	0.0033	0.0074	0.0060	0.0043	0.0042	ND	ND	ND	ND
Nickel	0.1 mg/L <sup>2</sup>	0.0180	0.0210	0.0210	0.0190	0.0250	ND	0.0200	0.0240	NT	0.0190	0.0120	0.0220	0.0150	0.0020	0.0220	0.0302	0.0270	0.0280	0.0390	0.0240	0.0220	0.0370	0.0370
Selenium	0.05 mg/L <sup>1</sup>	ND	0.0100	ND	0.0030	ND	0.1070	0.0070	0.1880	NT	0.1830	0.1410	0.1800	0.1920	0.2260	0.0340	ND	ND	ND	0.0120	0.0110	0.0140	ND	ND
Silver	0.1 mg/L <sup>2</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0054	ND	ND	0.0035	0.0035
Thallium	0.002 mg/L <sup>1</sup>	ND	0.0003	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	0.0032	ND	ND	0.0420	0.0440	ND	0.0140	0.0140	0.0140
Tin	22 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	0.0060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	0.26 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	0.0170	ND	0.0051	0.0072	0.0230	0.0240	ND	ND	ND	ND
Zinc	5 mg/L <sup>2</sup>	0.0140	0.0180	0.0200	0.0120	0.0210	0.0050	0.0120	0.0060	0.0060	190.0000	ND	0.0150	0.0100	0.0130	ND	0.0250	0.0472	0.0380	0.0120	0.0110	0.0160	0.0180	0.0180
Mercury	0.002 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	610 ug/l <sup>6</sup>	ND	ND	ND	ND	5.8	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	0.039 ug/l <sup>6</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	80 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	90 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromofrom	80 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	1000 ug/l <sup>6</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	10 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	80 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	80 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	4.6 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	4.6 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	2.2	ND	1.3	1.6	1.5	3.8	ND	ND	ND
Chloromethane	30 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	0.2 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.05 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	61 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	100 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	7 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	70 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.3 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene(PCE)	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene(TCE)	5 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	2000 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	2 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000 ug/l <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	NT														





TABLE 1 (CONT.)  
SUMMARY OF GROUNDWATER MONITORING RESULTS  
APPENDIX A - CONSTITUENTS FOR DETECTION MONITORING  
MONITORING WELL OW-14  
Concentration (Expressed in same units as Threshold Value)

Parameter	Threshold Value	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	JUN '10			
Arsimony	0.006 mg/L	ND	ND	0.0090	NT	0.0050	0.0410	ND	NT	ND	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	ND	ND	NT	ND	ND	NT	0.0060	ND	0.0110	0.0170	ND	ND	NT	ND	
Arsenic	0.010 mg/L	0.0010	ND	0.0020	NT	0.0020	0.0120	ND	NT	ND	0.0070	0.0050	0.0050	NT	ND	ND	NT	ND	ND	NT	ND	0.0060	ND	NT	ND	ND	NT	ND	ND	0.0050	ND	0.0070	0.0100	ND	NT	0.0070	
Barium	2 mg/L	0.155	0.2240	0.1990	NT	0.2400	0.2490	0.2290	NT	0.1380	0.1750	0.1980	0.1140	NT	0.2020	0.0910	NT	0.1570	0.1840	0.0790	NT	0.1440	0.1760	0.1370	NT	0.1750	0.1770	0.1470	0.1610	0.2100	0.2700	0.2030	NT	0.1900	NT	0.1900	
Beryllium	0.004 mg/L	ND	ND	ND	NT	0.0030	ND	ND	NT	0.0010	0.0010	ND	0.0010	NT	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	ND	ND	ND	0.0010	NT	ND	
Cadmium	0.005 mg/L	0.0060	0.0060	ND	NT	0.0060	0.0060	ND	NT	ND	0.0070	0.0060	0.0060	NT	ND	ND	NT	0.0050	0.0010	ND	NT	ND	0.0020	ND	NT	ND	0.0040	0.0020	0.0020	ND	NT	NT	NT	NT	NT	ND	
Chromium	0.1 mg/L	0.001	0.0060	0.0020	NT	0.0010	0.0020	ND	NT	0.0110	0.0030	0.0030	0.0170	NT	0.0050	0.0050	NT	0.0040	0.0010	0.0080	NT	ND	0.0050	ND	NT	ND	0.0065	NT	0.0018								
Cobalt	0.73 mg/L	0.006	0.0140	0.0090	NT	0.0140	0.0130	0.0360	NT	0.0100	0.0100	0.0100	0.0120	NT	0.0170	0.0120	NT	0.0080	0.0150	0.0120	NT	0.0080	0.0160	0.0370	NT	0.0140	0.0100	0.0100	0.0160	0.0090	0.0457	0.0261	NT	0.0130	NT	0.0130	
Copper	1.3 mg/L	ND	0.0060	ND	NT	0.0100	ND	0.0200	NT	0.0210	0.0210	ND	0.0170	NT	0.0100	0.0090	NT	0.0070	0.0050	0.0200	NT	0.0030	0.0080	0.0100	NT	ND	ND	0.0010	0.0090	ND	0.0049	0.0140	NT	0.0050	NT	0.0050	
Lead	0.015 mg/L	ND	0.0060	ND	NT	0.0170	ND	ND	NT	0.0160	0.0070	ND	0.0090	NT	0.0050	0.0050	NT	0.0040	0.0040	0.0070	NT	0.0020	0.0050	0.0030	NT	0.0020	ND	0.0050	0.0020	ND	ND	0.0039	NT	0.0011	NT	0.0011	
Mercury	0.002 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	ND	ND	NT	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	ND	NT	ND	NT	ND							
Nickel	0.1 mg/L	0.012	0.0220	0.0220	NT	0.0220	0.0470	0.0480	NT	0.0190	0.0160	0.0170	0.0200	NT	0.0270	0.0180	NT	0.0190	0.0230	0.0200	NT	0.0130	0.0200	0.0250	NT	0.0190	0.0200	0.0190	0.0170	0.0180	0.0180	0.0180	0.0460	0.0407	NT	0.0170	
Selenium	0.05 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	ND	NT	ND	0.0050	0.0140	NT	ND	ND	0.0060	NT	ND	ND	NT	ND	ND	NT	ND	0.0020	0.0310	0.0240	0.0090	ND	NT	ND		
Silver	0.1 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	0.0040	NT	0.0020	ND	NT	0.0020	0.0020	ND	0.0020	ND	ND	0.0020	ND	NT	ND	0.0040	ND	0.0090	ND	ND	ND	NT	ND	NT	ND	
Thallium	0.002 mg/L	ND	0.003	0.003	NT	ND	ND	NT	ND	ND	0.0010	NT	0.0010	NT	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	ND	NT	ND	0.0010	ND	ND	ND	NT	ND	NT	ND	
Tin	22 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	0.0200	ND	0.0070	0.0010	NT	ND	ND	NT	ND	0.0220	0.0160	NT	0.0310	ND	NT	ND	ND	NT	ND	ND	ND	ND	0.007	NT	ND	NT	ND	
Vanadium	0.26 mg/L	ND	0.0070	0.0030	NT	0.0070	ND	NT	0.0170	ND	0.0140	NT	0.0090	0.0050	NT	0.0050	0.0020	0.0080	NT	0.0030	0.0060	NT	ND	ND	NT	ND	ND	NT	ND	0.0290	ND	0.0063	NT	0.0028	NT	0.0028	
Zinc	2 mg/L	0.031	0.0480	0.0180	NT	0.0600	0.0230	0.0300	NT	0.0260	0.0170	0.0140	0.0680	NT	0.0240	0.0190	NT	0.0070	0.0100	0.0310	NT	0.0120	0.0310	0.0210	NT	0.0160	0.0070	0.0070	0.0270	ND	0.0453	0.0070	NT	0.0094	NT	0.0094	
Acetone	610 µg/L	ND	ND	ND	NT	ND	6.9	ND	NT	ND	ND	ND	NT	ND	ND	NT	ND	ND	NT	ND	6.4	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	ND	NT	ND	NT	ND	
Acrylonitrile	0.039 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	ND	NT	ND	NT	ND	
Benzene	5 µg/L	2.77	ND	ND	NT	3.2	4.1	ND	NT	2.7	3.1	3.9	2.6	NT	3.5	ND	NT	3.3	3.6	ND	NT	2.9	4.3	1.9	NT	1.8	3.5	3.6	4.1	2.1	3.7	1.7	NT	3.6	NT	3.6	
Bromochloroethane	80 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	ND	NT	ND	NT	ND	
Bromodichloroethane (THM)	90 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	ND	NT	ND	NT	ND	
Bromoform	80 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	ND	NT	ND	NT	ND	
Carbon disulfide	1000 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	1.8	ND	2.2	NT	3.3	ND	NT	3.4	ND	NT	2.2	2.9	1.8	NT	1.4	2.7	2.2	3.2	1.8	2.7	1.9	NT	3.0	NT	3.0	NT	3.0	
Carbon tetrachloride	5 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND
Chlorobenzene	100 µg/L	13.3	10.8	ND	NT	13.42	15.6	ND	NT	12.5	13.5	15.4	10.7	NT	16.7	5.3	NT	15.7	15.7	3.2	NT	11.3	19.1	8.0	NT	7.0	14.3	14.6	16.5	7.1	15.3	6.1	NT	14.0	NT	14.0	
Chloroethane	4.6 mg/L	ND	ND	ND	NT	2.27	ND	NT	3.3	ND	2.0	1.5	NT	ND	ND	NT	ND	ND	NT	ND	2.5	ND	NT	1.4	2.4	ND	1.6	1.3	ND	NT	3.0	NT	3.0	NT	3.0		
Chloroform	80 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND
Chlorodibromomethane (THM)	80 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND
1,2-Dibromo-3-chloropropane (DBCP)	1.2 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND
1,2-Dibromoethane (EDB)	0.05 mg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND
1,2-Dichlorobenzene	600 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND
1,4-Dichlorobenzene	75 µg/L	2.62	7.80	ND	NT	ND	ND	NT	1.8	ND	2.2	NT	3.3	ND	NT	3.4	ND	NT	2.2	2.9	1.8	NT	1.4	2.7	2.2	3.2	1.8	2.7	1.9	NT	3.0	NT	3.0	NT	3.0		
trans-1,4-Dichloro-2-butene	µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	NT	ND	NT	ND	NT	ND	
1,1-Dichloroethane	5 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	NT	ND	NT	ND	NT	ND	
1,2-Dichloroethane	5 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	NT	ND	NT	ND	NT	ND	
trans-1,2-Dichloroethane	100 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	NT	ND	NT	ND	NT	ND	
1,2-Dichloropropane	5 µg/L	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	NT	ND	ND	NT	ND	ND	ND	NT	ND	NT	ND	ND	NT	ND	ND	NT	ND	NT	ND	NT	ND	
cis-1,2-Dichloropropane	µg/L																																				



**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	JUN '18	MAR '18	NOV '17
Antimony	0.006 mg/L	0.002	ND	ND
Arsenic	0.010 mg/L	0.001	ND	ND
Barium	2 mg/L	0.011	0.0190	0.1000
Beryllium	0.004 mg/L	ND	ND	ND
Cadmium	0.005 mg/L	ND	ND	ND
Chromium	0.1 mg/L	0.004	0.0060	0.0050
Cobalt	0.73 mg/L	0.002	0.0050	0.0050
Copper	1.3 mg/L	ND	ND	ND
Lead	0.015 mg/L	ND	ND	ND
Mercury	0.002 mg/L	ND	ND	ND
Nickel	0.1 mg/L	0.009	0.0100	0.0100
Selenium	0.05 mg/L	ND	0.0100	0.0050
Silver	0.1 mg/L	ND	ND	ND
Thallium	0.002 mg/L	ND	0.0003	ND
Tin	22 mg/L	ND	ND	ND
Vanadium	0.26 mg/L	ND	ND	ND
Zinc	2 mg/L	0.022	0.024	0.0210
Acetone	610 µg/L	ND	ND	ND
Acrylonitrile	0.039 µg/L	ND	ND	ND
Benzene	5 µg/L	ND	ND	ND
Bromochloromethane	80 µg/L	ND	ND	ND
Bromodichloromethane (THM)	90 µg/L	ND	ND	ND
Bromoform	80 µg/L	ND	ND	ND
Carbon disulfide	1000 µg/L	ND	ND	ND
Carbon tetrachloride	5 µg/L	ND	ND	ND
Chlorobenzene	100 µg/L	ND	ND	ND
Chloroethane	4.6 µg/L	ND	ND	ND
Chloroform	80 µg/L	ND	ND	ND
Chlorobromomethane (THM)	80 µg/L	ND	ND	ND
1,2-Dibromo-3-chloroethane (DBCP)	0.2 µg/L	ND	ND	ND
1,2-Dibromoethane (EDB)	0.05 µg/L	ND	ND	ND
1,2-Dichlorobenzene	600 µg/L	ND	ND	ND
1,4-Dichlorobenzene	75 µg/L	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/L	ND	ND	ND
1,1-Dichloroethane	5 µg/L	ND	ND	ND
1,2-Dichloroethane	5 µg/L	ND	ND	ND
1,1-Dichloroethylene	7 µg/L	ND	ND	ND
cis-1,2-Dichloroethane	70 µg/L	ND	ND	ND
trans-1,2-Dichloroethane	100 µg/L	ND	ND	ND
1,2-Dichloropropene	5 µg/L	ND	ND	ND
cis-1,3-Dichloropropene	µg/L	ND	ND	ND
trans-1,3-Dichloropropene	700 µg/L	ND	ND	ND
Ethylbenzene	160 µg/L	ND	ND	ND
Methyl butyl ketone(2-Hexanone)	10 µg/L	ND	ND	ND
Bromomethane	30 µg/L	ND	ND	ND
Chloromethane	61 µg/L	ND	ND	ND
Methylene chloride	5 µg/L	ND	ND	ND
Methyl ethyl ketone(2-Butanone)	4000 µg/L	ND	ND	ND
Methyl iodide	µg/L	ND	ND	ND
4-Methyl-2-pentanone	µg/L	ND	ND	ND
Styrene	100 µg/L	ND	ND	ND
1,1,1,2-Tetrachloroethane	70 µg/L	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.3 µg/L	ND	ND	ND
Tetrachloroethylene(PCE)	5 µg/L	ND	ND	ND
Toluene	1000 µg/L	ND	ND	ND
1,1,1-Trichloroethane	200 µg/L	ND	ND	ND
1,1,2-Trichloroethane	5 µg/L	ND	ND	ND
Trichloroethylene(TCE)	5 µg/L	ND	ND	ND
Trichlorofluoromethane	2000 µg/L	ND	ND	ND
1,2,3-Trichloropropane	40 µg/L	ND	ND	ND
Vinyl acetate	410 µg/L	ND	ND	ND
Vinyl chloride	2 µg/L	ND	ND	ND
Xylenes	10000 µg/L	ND	ND	ND
Methyl tert-butyl ether (MTBE)	20-40 µg/L	6.53	7.8	4.6

ND = Exceeded MCL

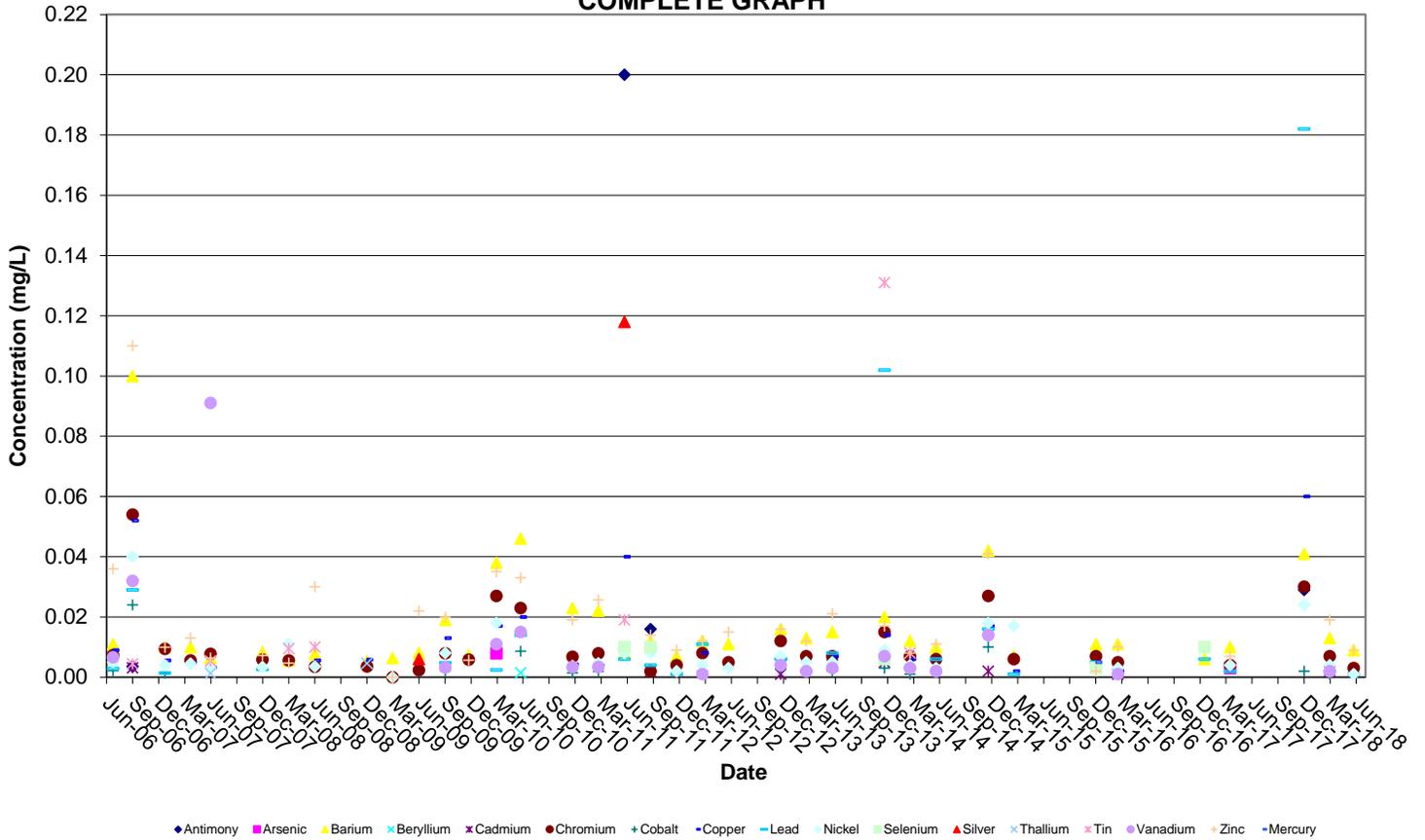
1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2004 Edition of the Drinking Water Standards and Health Advisories
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

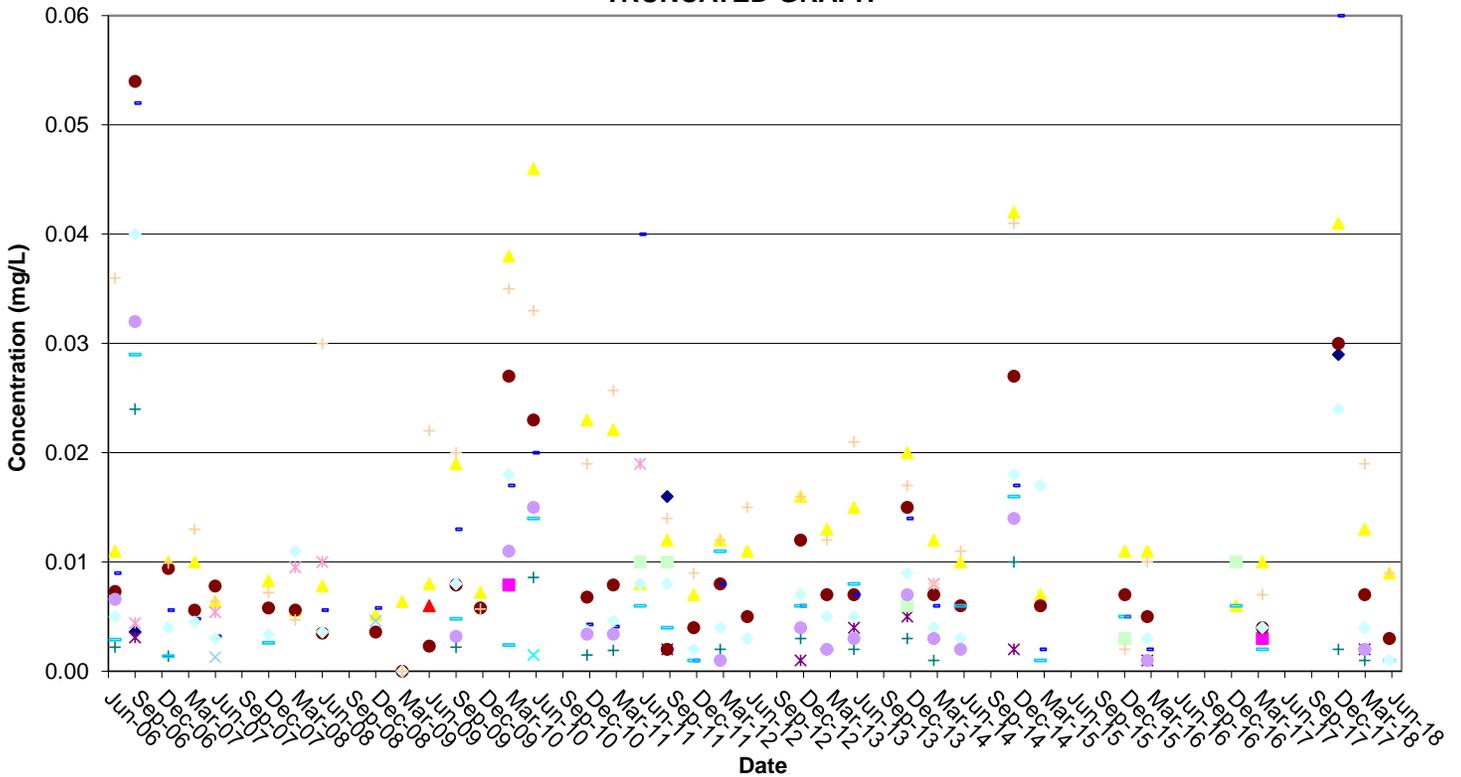
**ATTACHMENT NO. 3**  
**HISTORICAL DETECTED METALS GRAPHS**

Detected Appendix A Metals in OW-9  
Tiverton Landfill

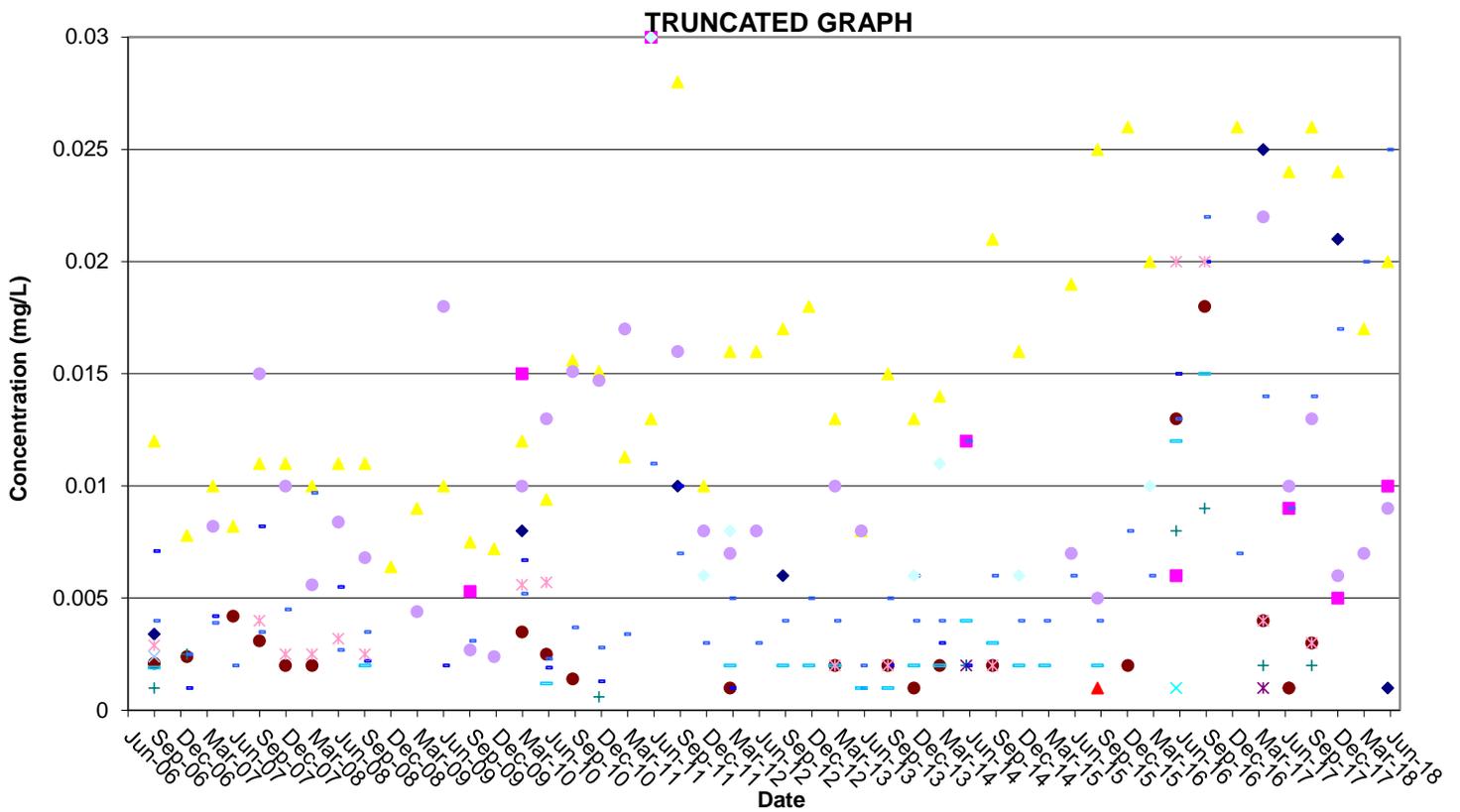
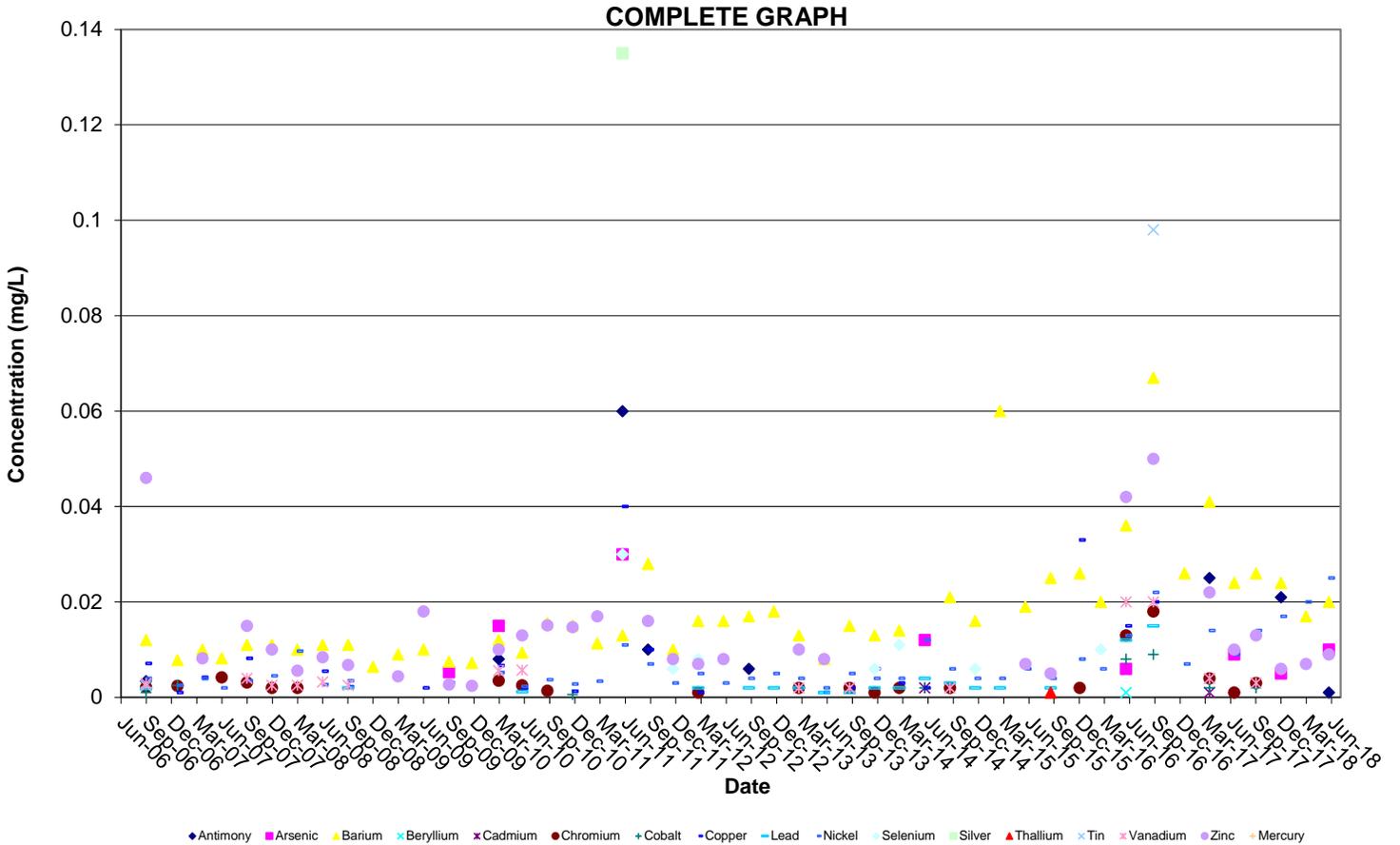
COMPLETE GRAPH



TRUNCATED GRAPH

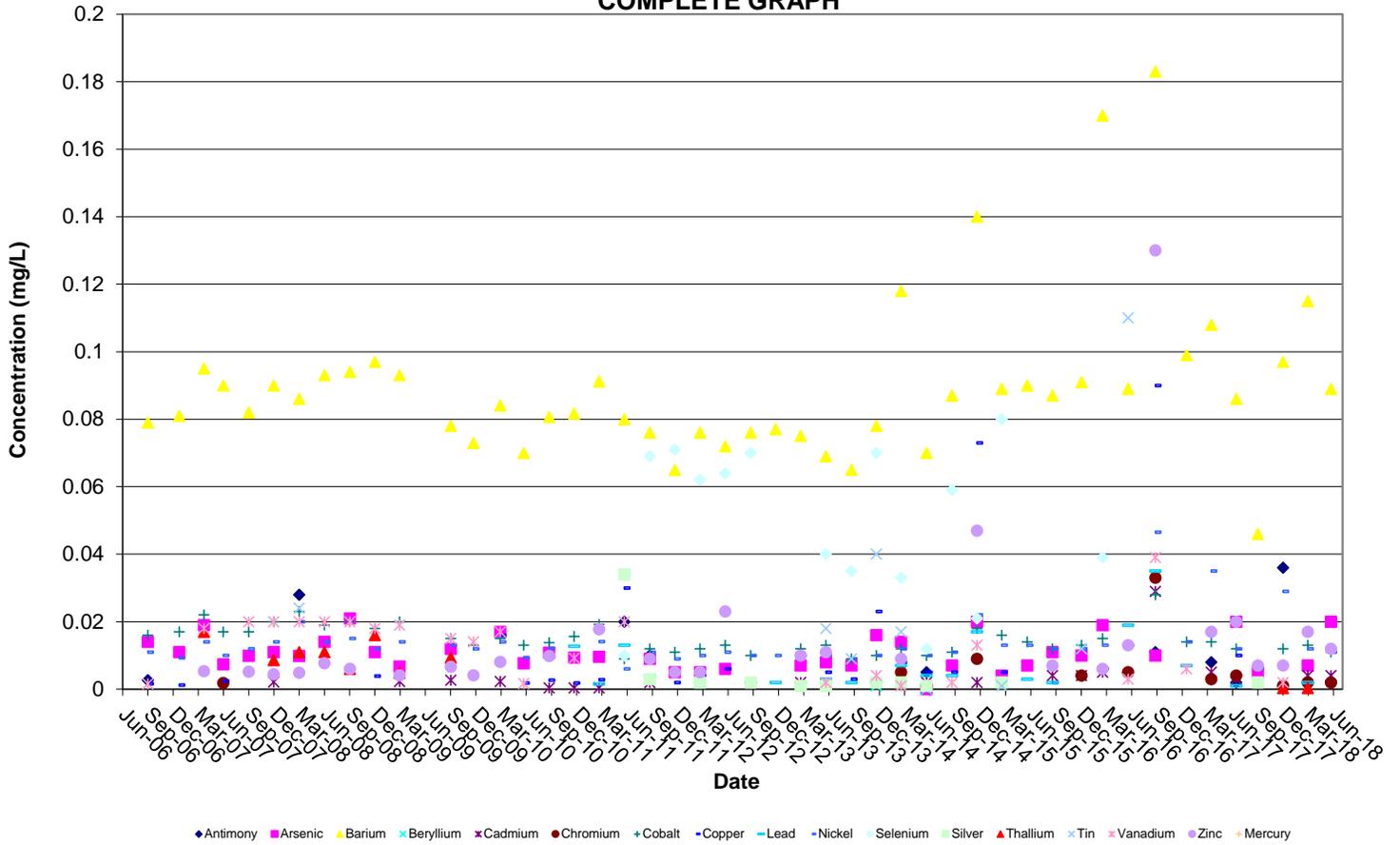


# Detected Appendix A Metals in OW-12 Tiverton Landfill

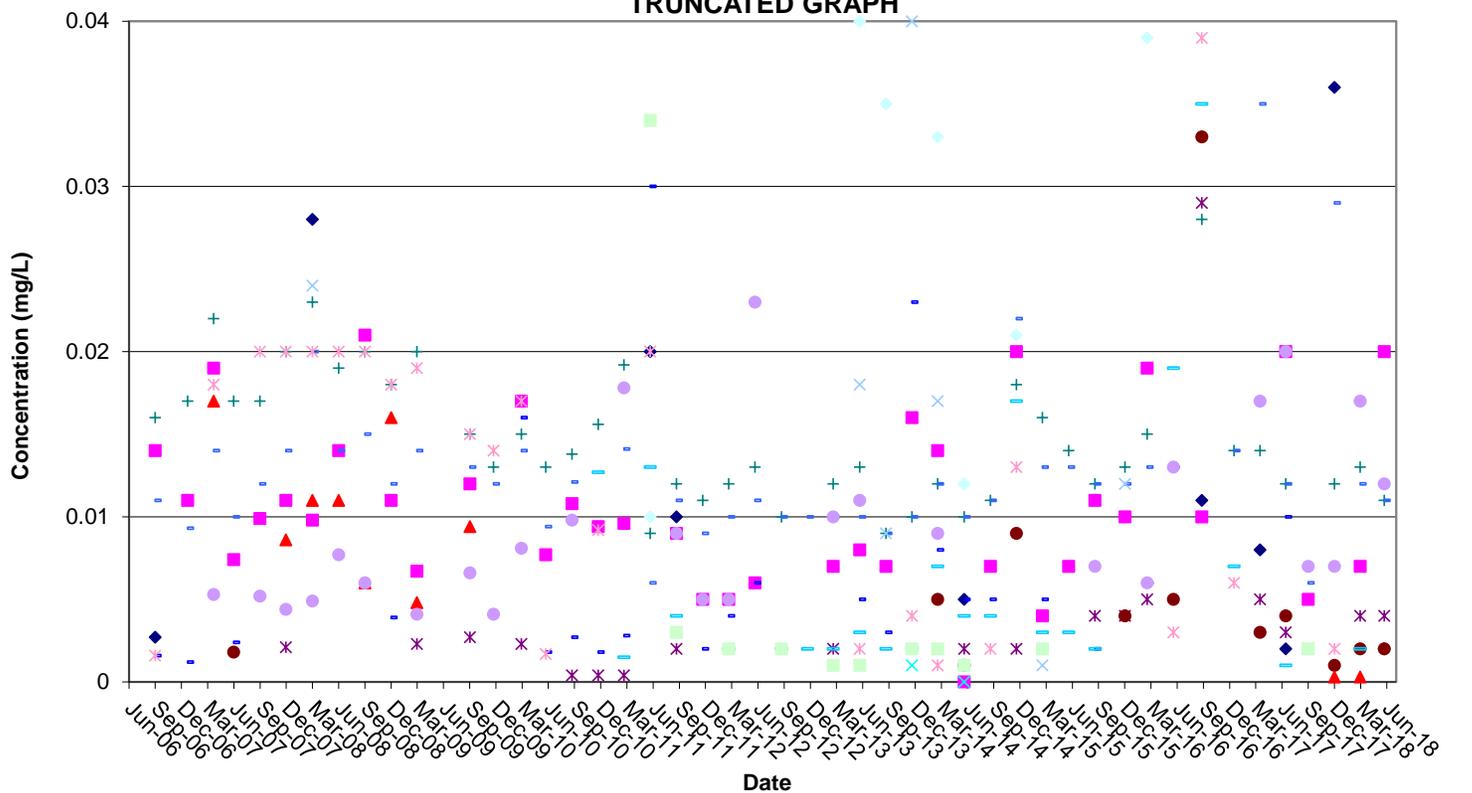


# Detected Appendix A Metals in OW-13 Tiverton Landfill

## COMPLETE GRAPH

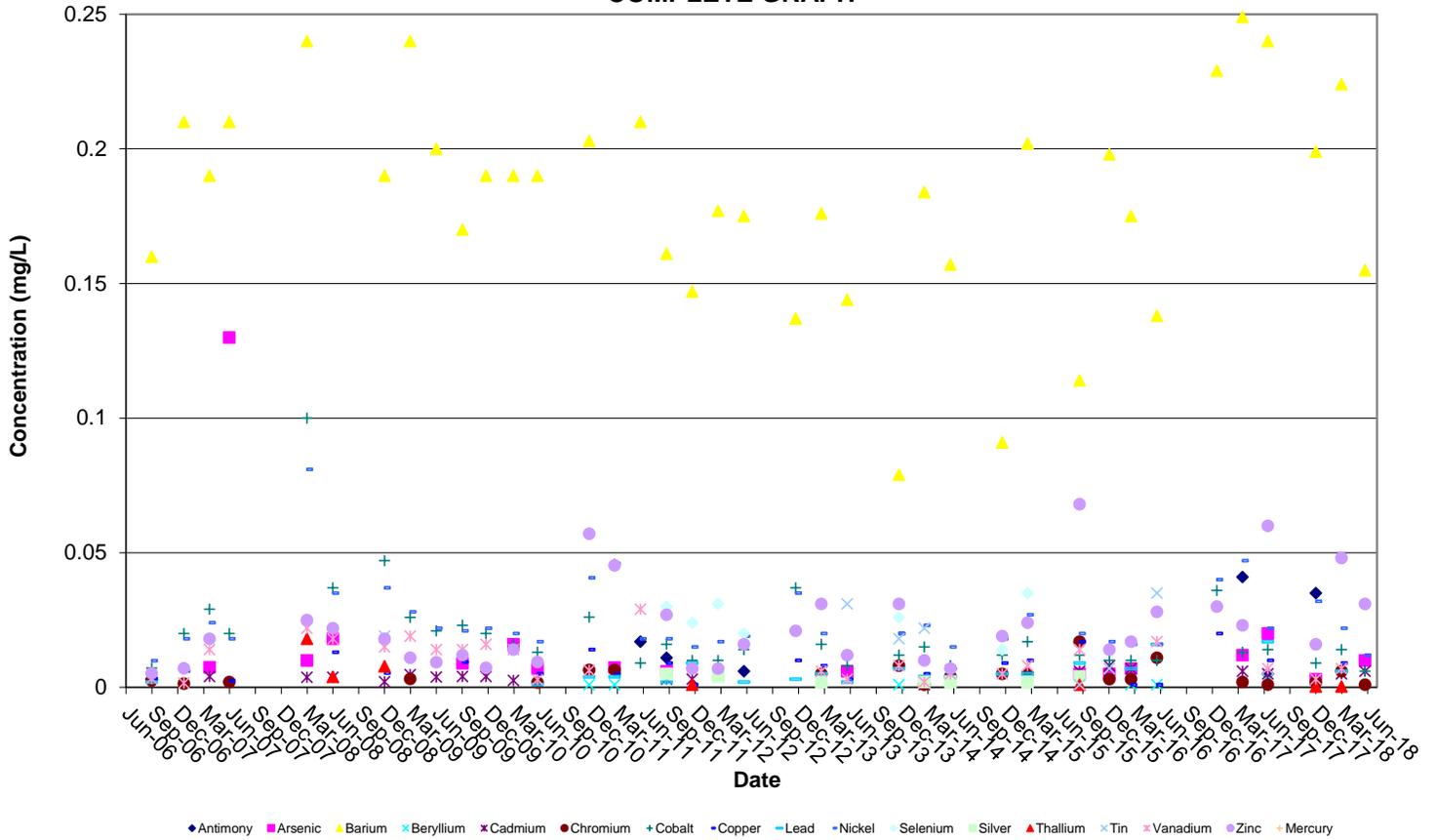


## TRUNCATED GRAPH

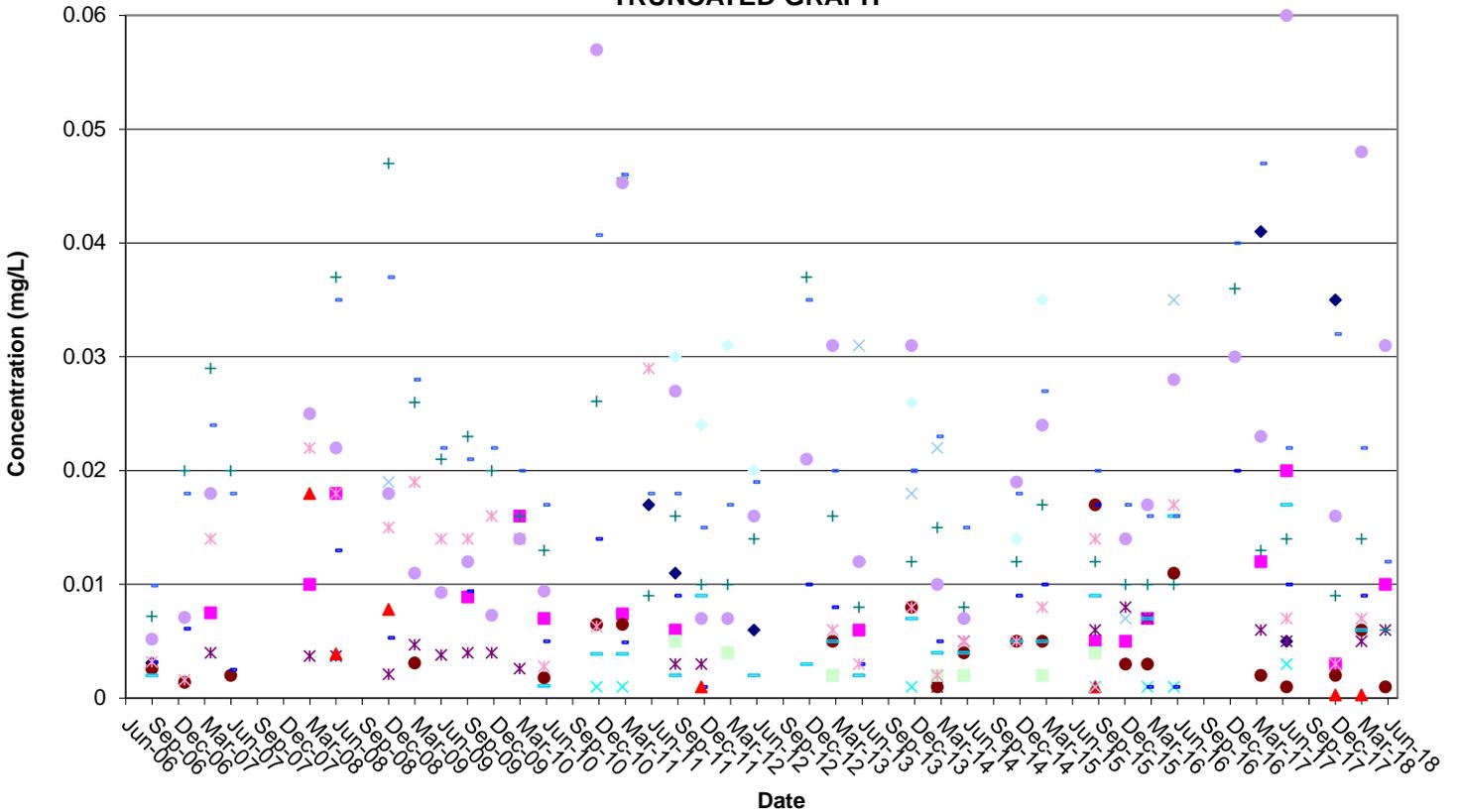


Detected Appendix A Metals in OW-14  
Tiverton Landfill

COMPLETE GRAPH

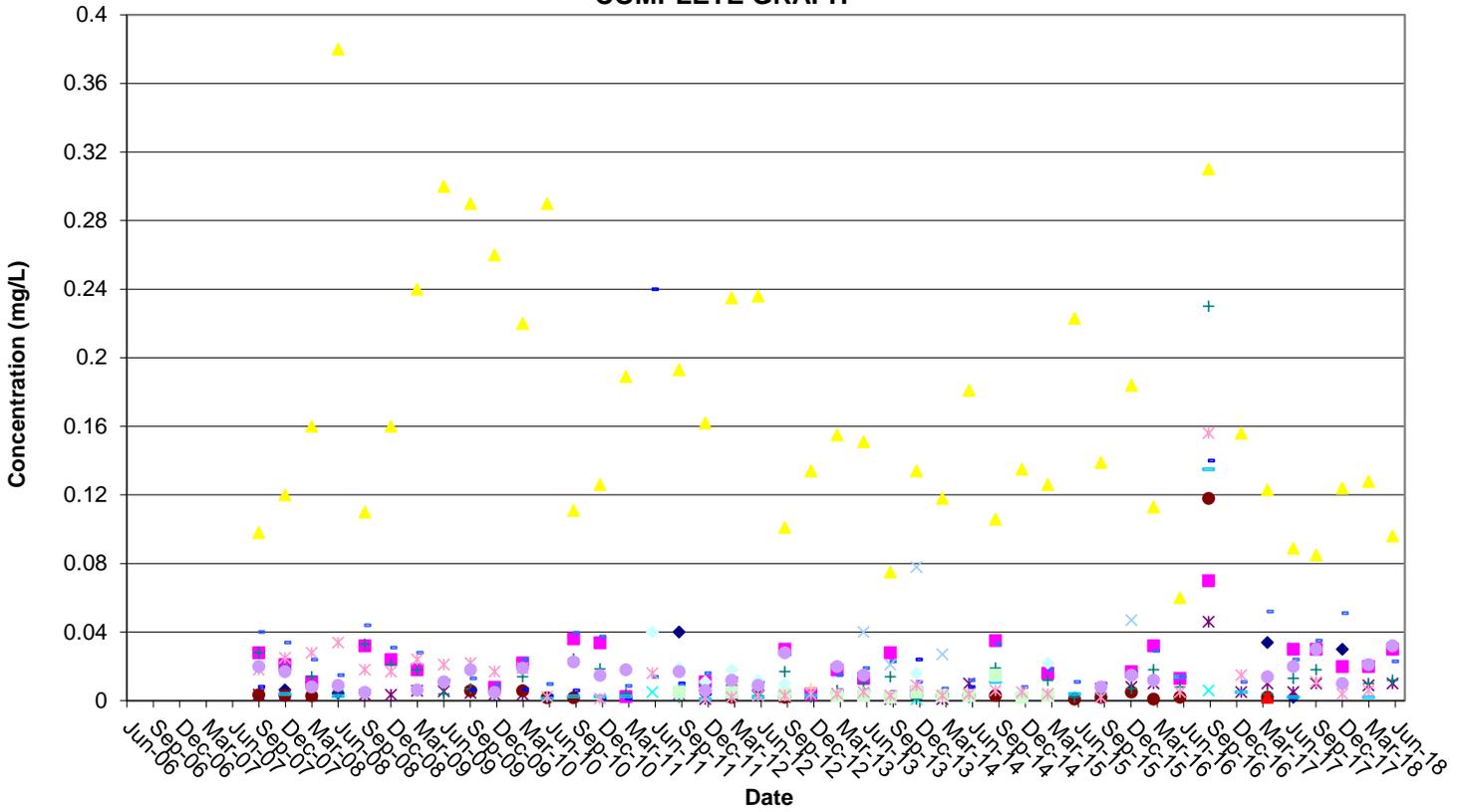


TRUNCATED GRAPH

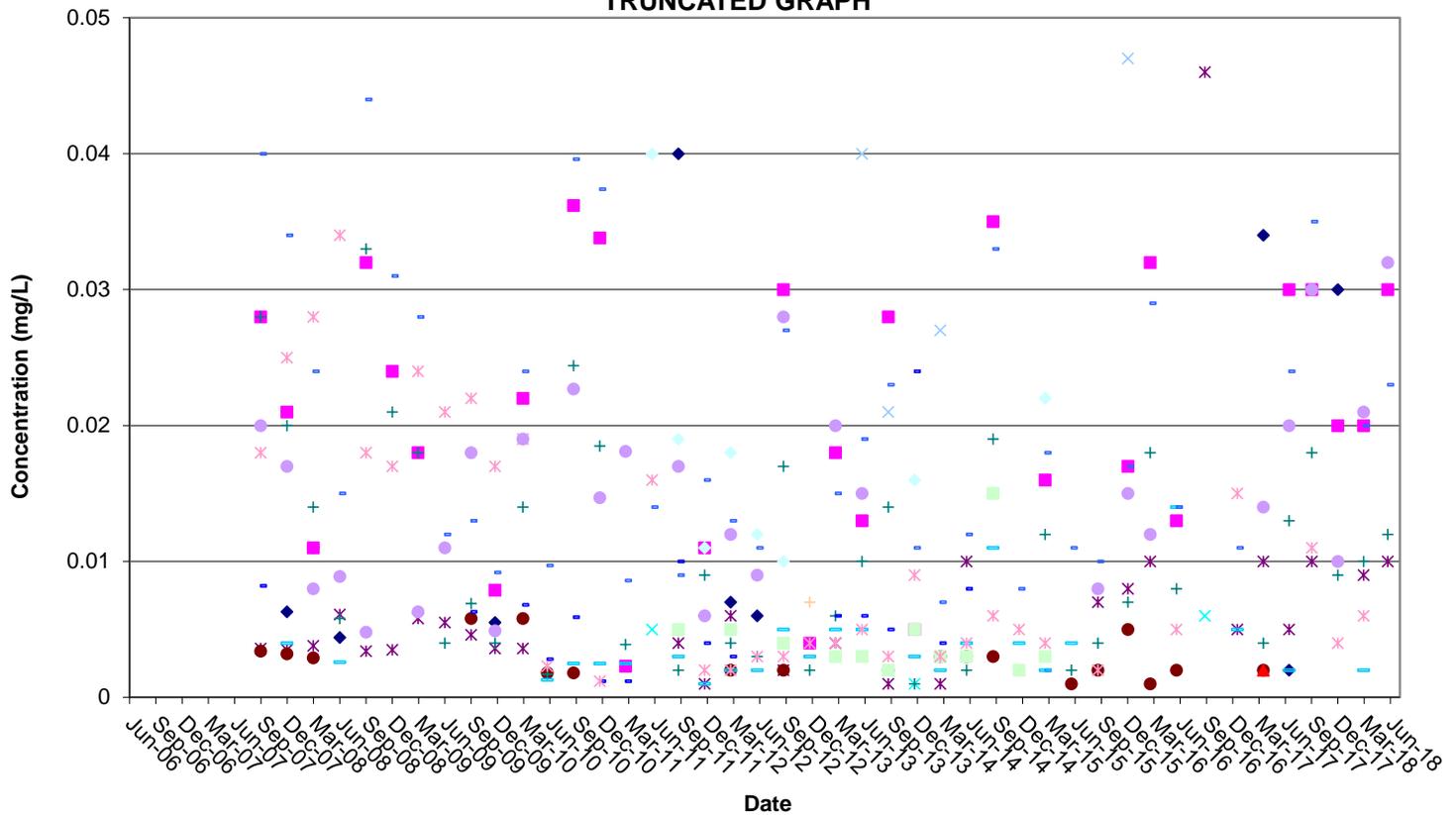


Detected Appendix A Metals in OW-15  
Tiverton Landfill

COMPLETE GRAPH

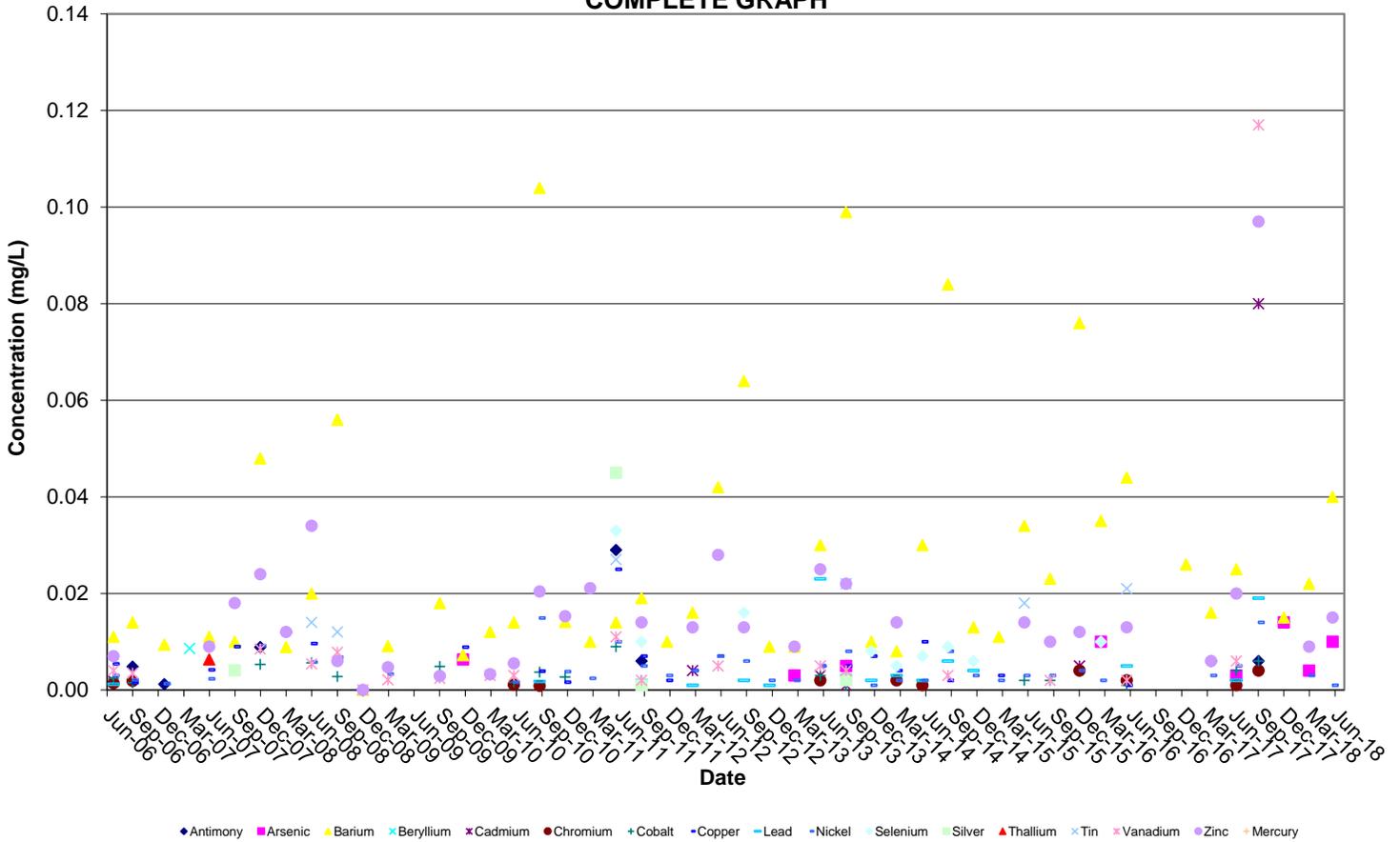


TRUNCATED GRAPH

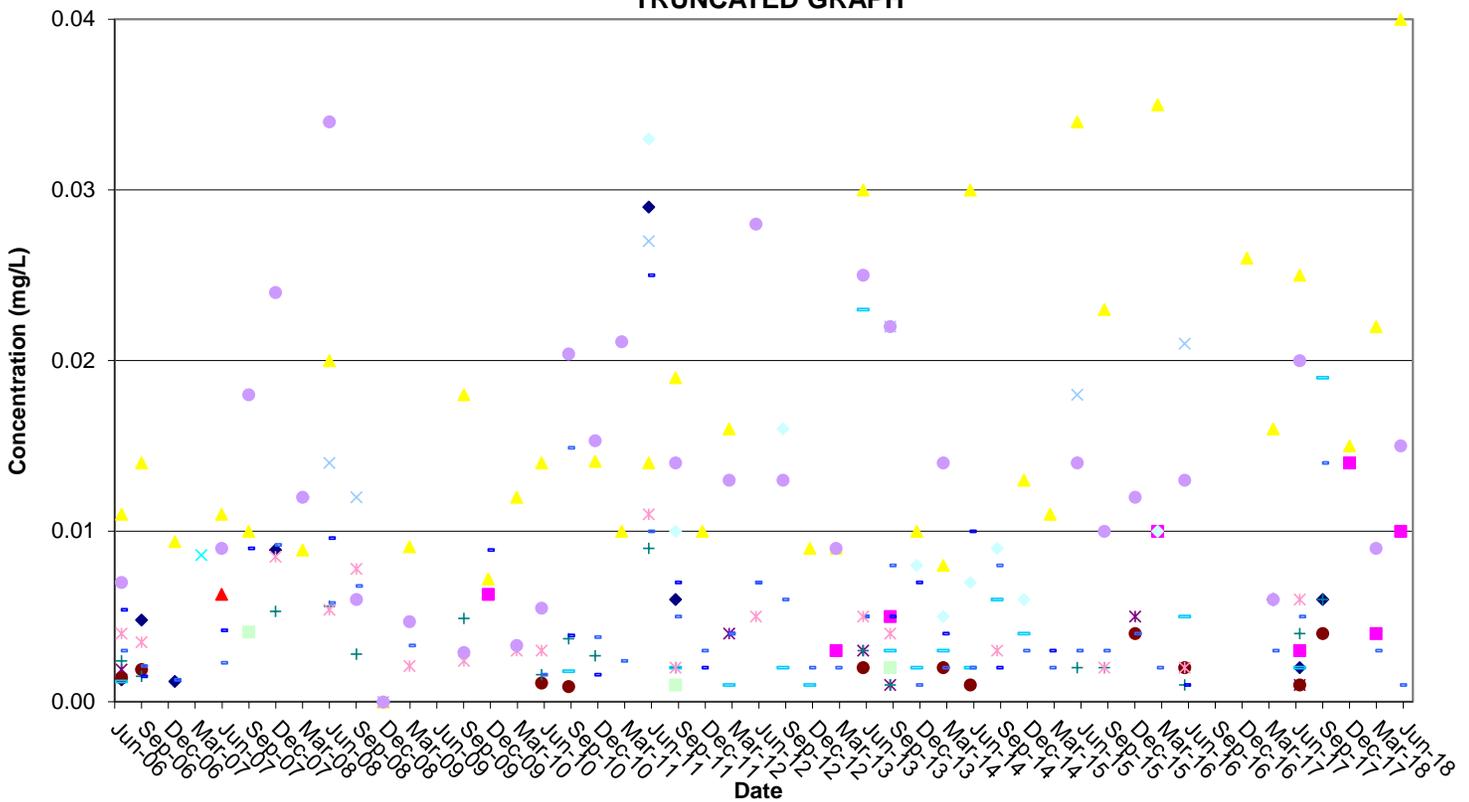


# Detected Appendix A Metals at Surface Water Sampling Location SW-1 Tiverton Landfill

## COMPLETE GRAPH

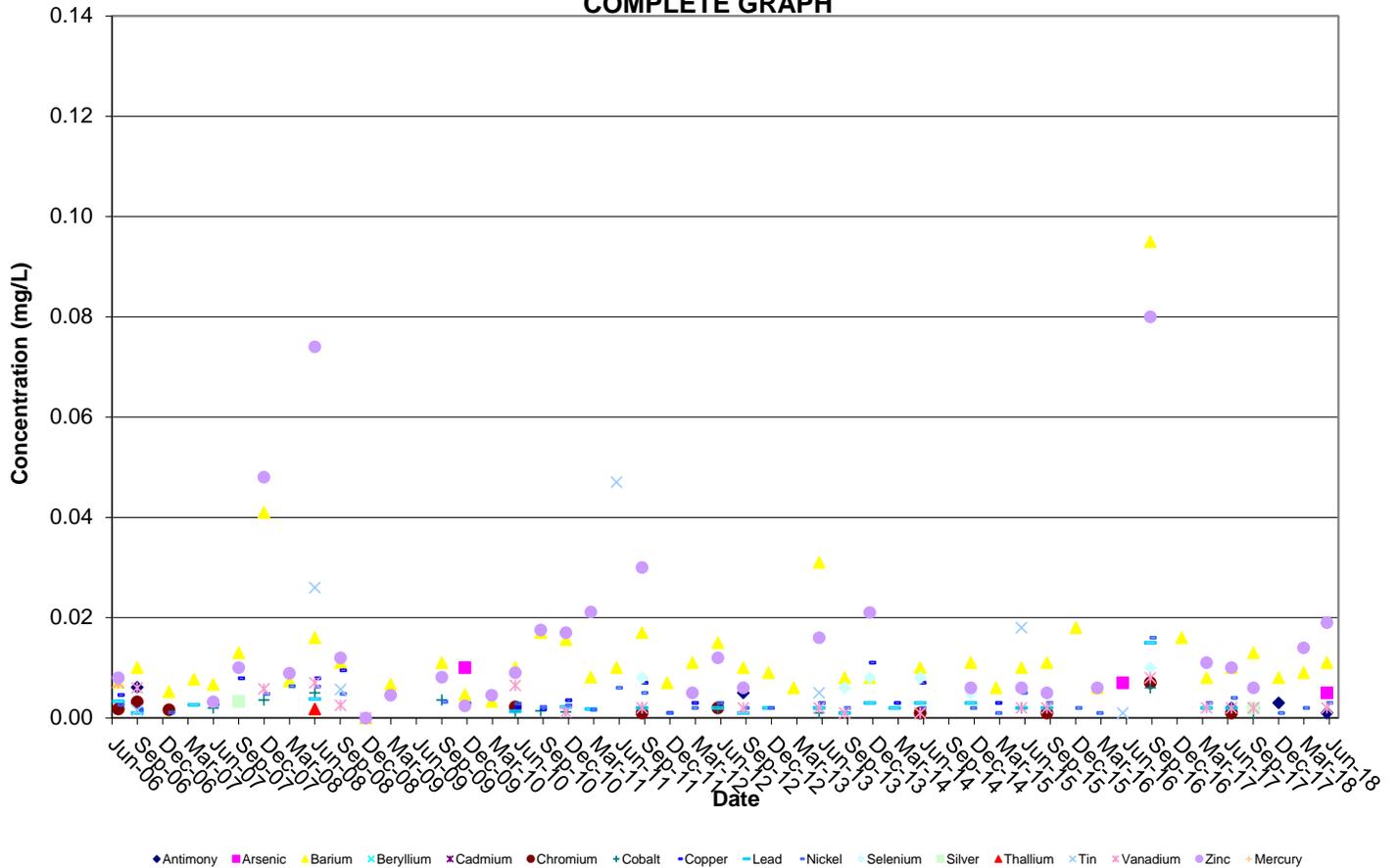


## TRUNCATED GRAPH

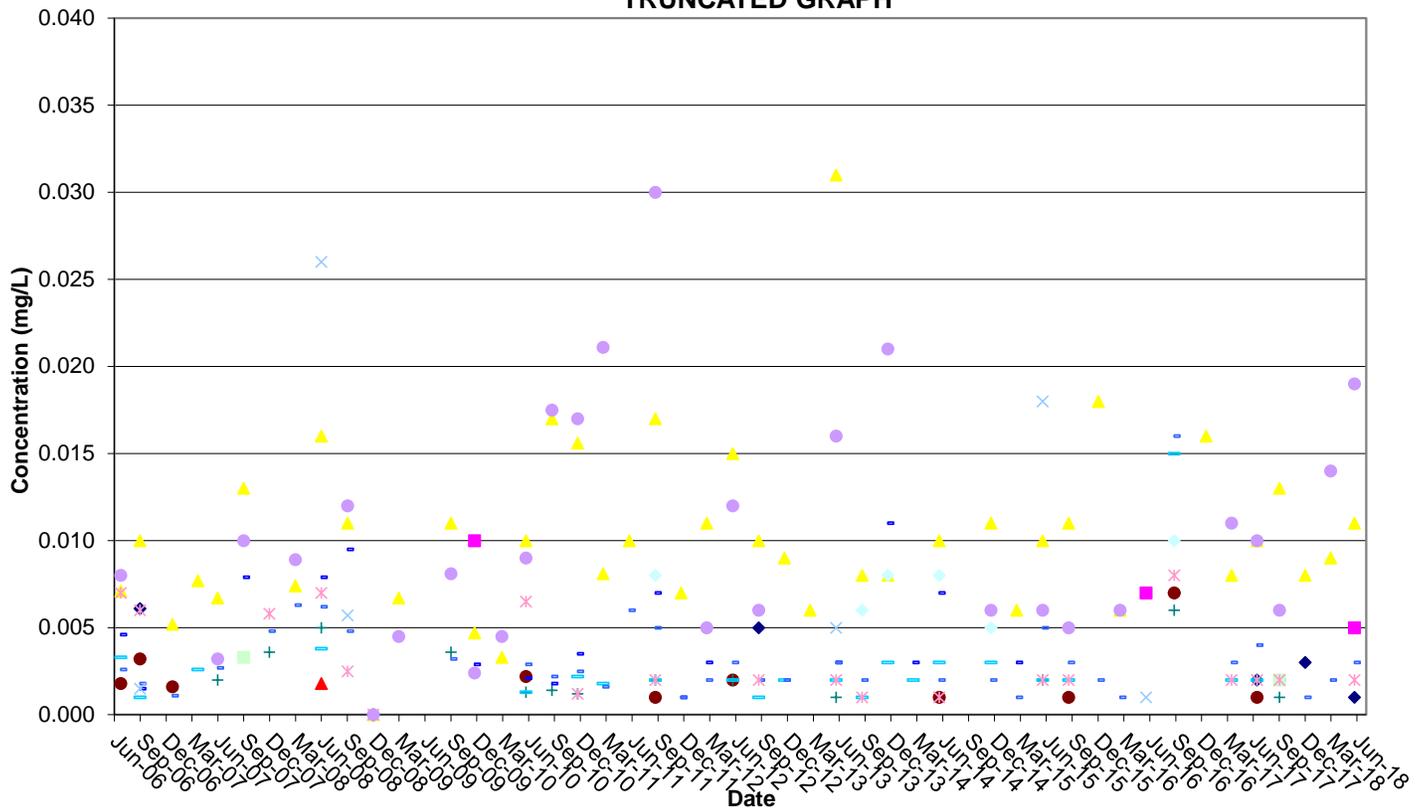


# Detected Appendix A Metals at Surface Water Sampling Location SW-2 Tiverton Landfill

## COMPLETE GRAPH

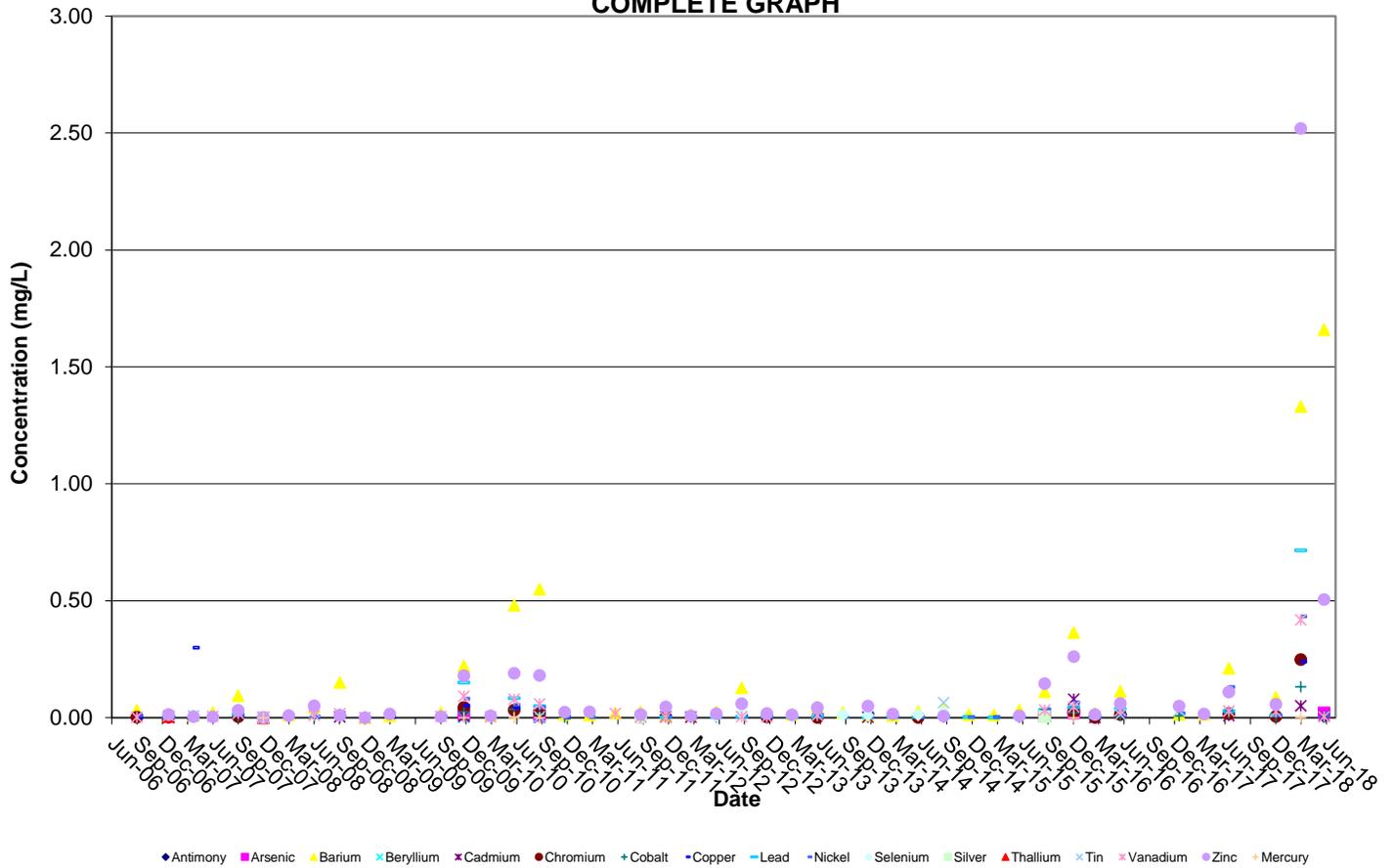


## TRUNCATED GRAPH

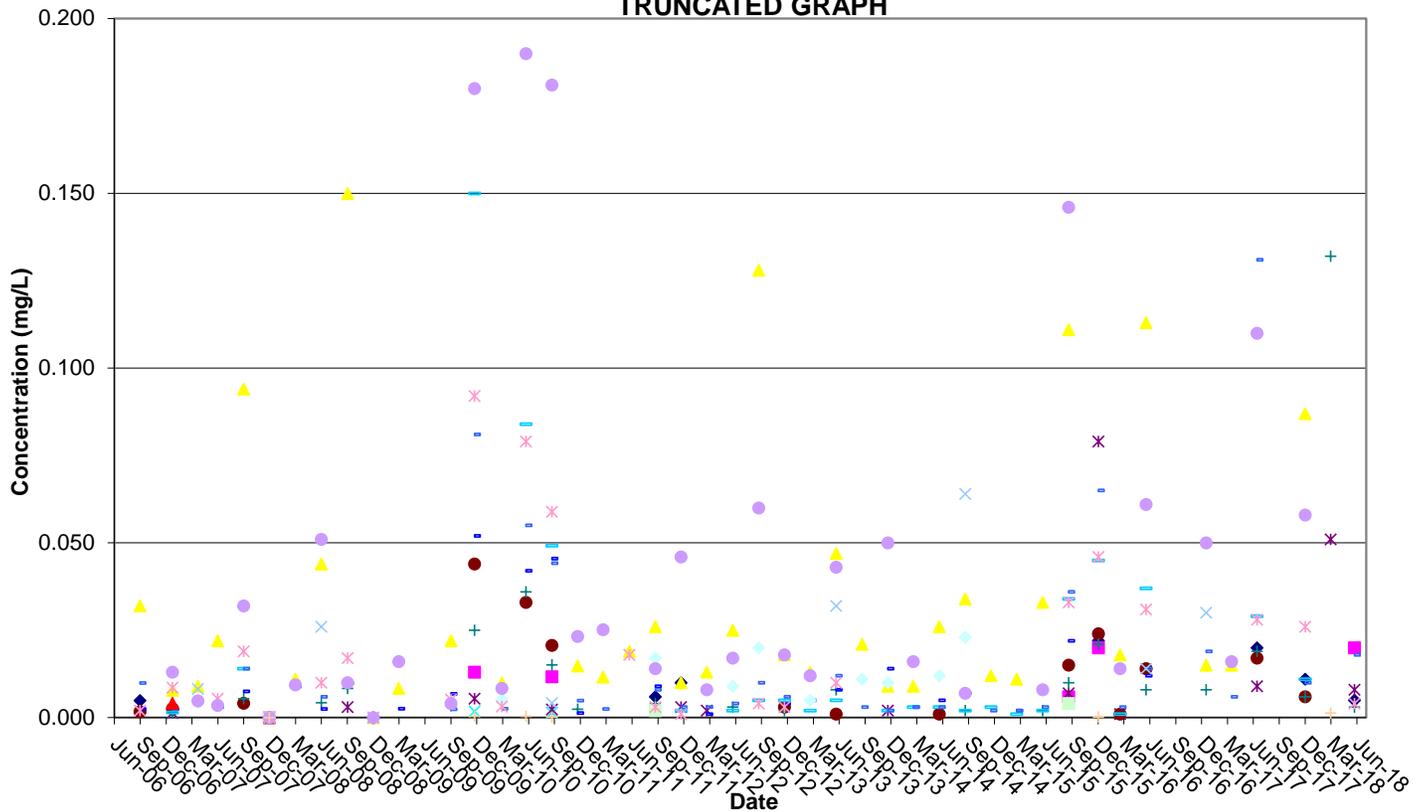


# Detected Appendix A Metals at Surface Water Sampling Location SW-3 Tiverton Landfill

## COMPLETE GRAPH



## TRUNCATED GRAPH



**ATTACHMENT NO. 4**  
**TOLERANCE INTERVAL STATISTICAL EVALUATION**

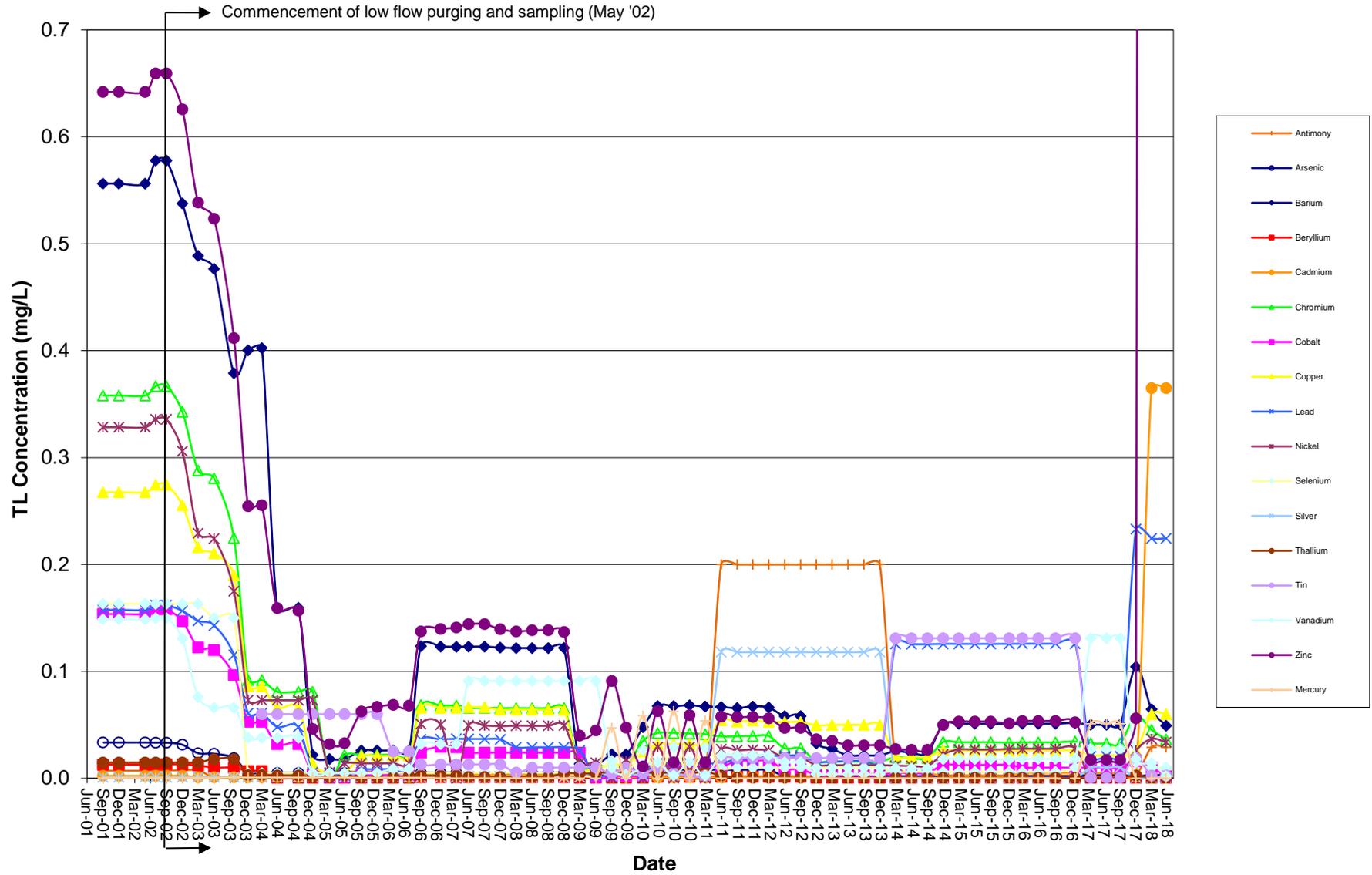
**TABLE 3**  
**SUMMARY OF GROUNDWATER MONITORING RESULTS - TOLERANCE INTERVAL COMPARISON**  
**JUN 2018 - SAMPLE ROUND**  
 Concentration (units as specified for Threshold Value)

Parameter	OW-9		Background Well	Compliance wells				
	Tolerance Limit * TL=AVG+K*S	Threshold Value		OW-9	OW-12	OW-13	OW-14	OW-15
<b>METALS</b>								
Antimony	0.0290 mg/L	0.006 mg/L <sup>1</sup>	ND	0.0010	0.0020	ND	ND	
Arsenic	0.0030 mg/L	0.010 mg/L <sup>1</sup>	ND	0.0100	0.0200	0.0100	0.0300	
Barium	0.0491 mg/L	2 mg/L <sup>1</sup>	0.0090	0.0200	0.0890	0.1550	0.0960	
Beryllium	0.0005 mg/L	0.004 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	
Cadmium	0.3650 mg/L	0.005 mg/L <sup>1</sup>	ND	ND	0.0040	0.0060	0.0100	
Chromium	0.0364 mg/L	0.1 mg/L <sup>1</sup>	0.0030	ND	0.0020	0.0010	ND	
Cobalt	0.0020 mg/L	0.73 mg/L <sup>2</sup>	ND	ND	0.0110	0.0060	0.0120	
Copper	0.0600 mg/L	1.3 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	
Lead	0.2245 mg/L	0.015 mg/L <sup>1</sup>	0.0010	ND	ND	ND	ND	
Mercury	0.0001 mg/L	0.002 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	
Nickel	0.0337 mg/L	0.1 mg/L <sup>4</sup>	0.0010	0.0250	0.0110	0.0120	0.0230	
Selenium	0.0100 mg/L	0.05 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	
Silver	0.0005 mg/L	0.1 mg/L <sup>2,3</sup>	ND	ND	ND	ND	ND	
Thallium	0.0005 mg/L	0.002 mg/L <sup>1</sup>	ND	ND	ND	ND	ND	
Tin	0.0025 mg/L	22 mg/L <sup>5</sup>	ND	ND	ND	ND	ND	
Vanadium	0.0020 mg/L	0.26 mg/L <sup>2</sup>	ND	ND	ND	ND	ND	
Zinc	13.7203 mg/L	2 - 5 mg/L <sup>2,3</sup>	0.0090	0.0090	0.0120	0.0310	0.0320	
<b>VOCS</b>								
Acetone		610 µg/L <sup>2</sup>						
Acrylonitrile		0.039 µg/L <sup>2</sup>						
Benzene		5 µg/L <sup>1</sup>						
Bromochloromethane		80 µg/L <sup>4</sup>						
Bromodichloromethane (THM)		90 µg/L <sup>1</sup>						
Bromoform		80 µg/L <sup>1</sup>						
Carbon disulfide		1000 µg/L <sup>2</sup>						
Carbon tetrachloride		5 µg/L <sup>1</sup>						
Chlorobenzene		100 µg/L <sup>1</sup>						
Chloroethane		4.6 µg/L <sup>2</sup>						
Chloroform		80 µg/L <sup>1</sup>						
Chlorodibromomethane (THM)		80 µg/L <sup>1</sup>						
1,2-Dibromo-3-chloropropane (DBCP)		0.2 µg/L <sup>1</sup>						
1,2-Dibromoethane (EDB)		0.05 µg/L <sup>1</sup>						
1,2-Dichlorobenzene		600 µg/L <sup>1</sup>						
1,4-Dichlorobenzene		75 µg/L <sup>1</sup>						
trans-1,4-Dichloro-2-butene		µg/L						
1,1 -Dichloroethane		5 µg/L						
1,2-Dichloroethane		5 µg/L <sup>1</sup>						
1,1-Dichloroethylene		7 µg/L <sup>1</sup>						
cis-1,2-Dichloroethene		70 µg/L <sup>1</sup>						
trans-1,2-Dichloroethene		100 µg/L <sup>1</sup>						
1,2-Dichloropropane		5 µg/L <sup>1</sup>						
cis-1,3-Dichloropropene		µg/L						
trans-1,3-Dichloropropene		µg/L						
Ethylbenzene		700 µg/L <sup>1</sup>						
Methyl butyl ketone(2-Hexanone)		160 µg/L <sup>2</sup>						
Bromomethane		10 µg/L <sup>4</sup>						
Chloromethane		30 µg/L <sup>4</sup>						
Dibromomethane		61 µg/L <sup>2</sup>						
Methylene chloride		5 µg/L <sup>1</sup>						
Methyl ethyl ketone(2-Butanone)		4000 µg/L <sup>4</sup>						
Methyl iodide		µg/L						
4-Methyl-2-pentanone		µg/L						
Styrene		100 µg/L <sup>1</sup>						
1,1,1,2-Tetrachloroethane		70 µg/L <sup>4</sup>						
1,1,2,2-Tetrachloroethane		0.3 µg/L <sup>4</sup>						
Tetrachloroethylene(PCE)		5 µg/L <sup>1</sup>						
Toluene		1000 µg/L <sup>1</sup>						
1,1,1-Trichloroethane		200 µg/L <sup>1</sup>						
1,1,2-Trichloroethane		5 µg/L <sup>1</sup>						
Trichloroethylene(TCE)		5 µg/L <sup>1</sup>						
Trichlorofluoromethane		2000 µg/L <sup>4</sup>						
1,2,3-Trichloropropane		40 µg/L <sup>4</sup>						
Vinyl acetate		410 µg/L <sup>2</sup>						
Vinyl chloride		2 µg/L <sup>1</sup>						
Xylenes		10000 µg/L <sup>1</sup>						
Methyl tert-butyl ether (MTBE)		20 - 40 µg/L <sup>4</sup>						

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.

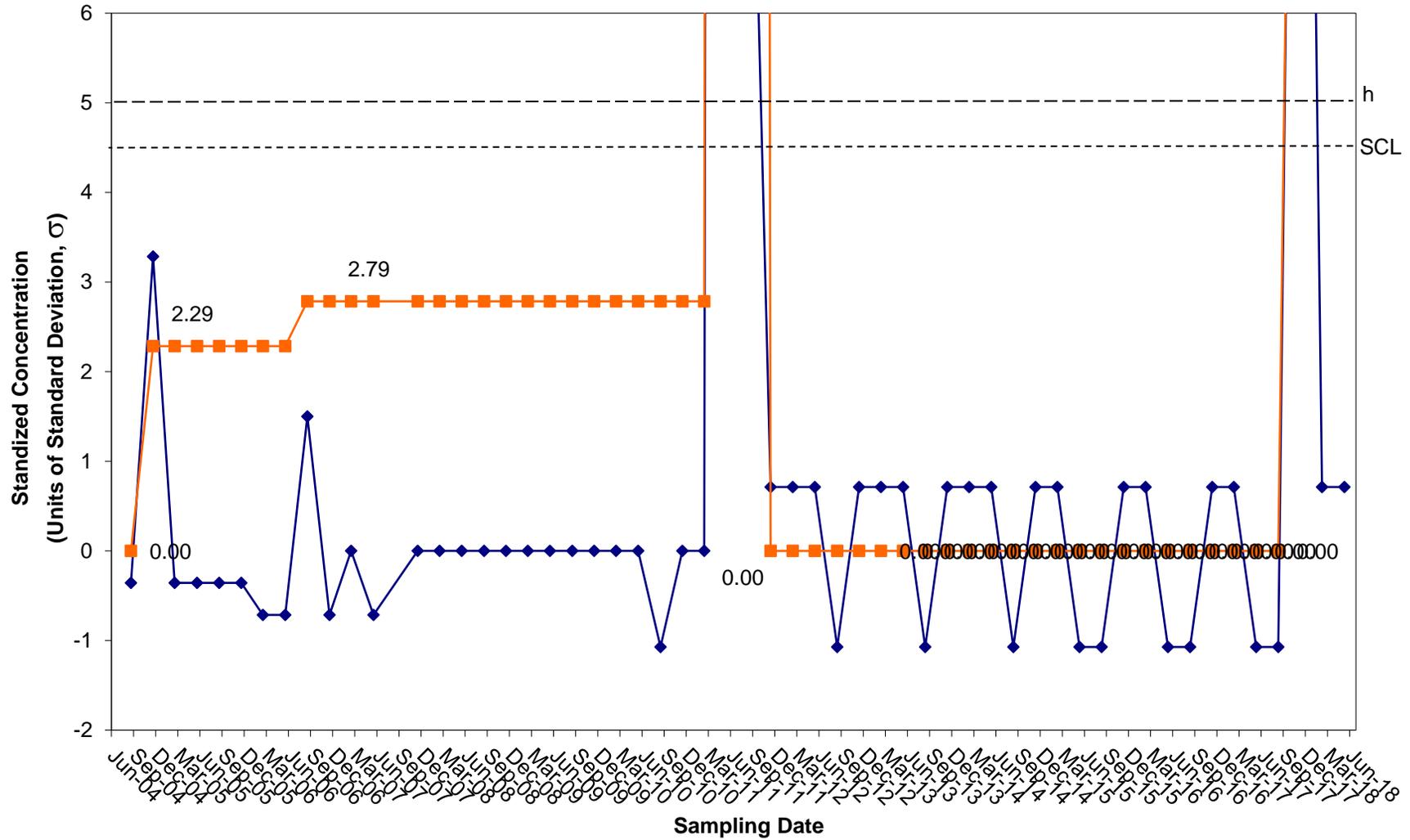
No threshold value has been provided for parameters not identified in the sources listed above  
 " " = Exceedance of TL \* Tolerance Limit (TL) constructed from background (upgradient) well data from OW-9.  
 ND = Not Detected

# Historical Tolerance Limit Concentrations from Background Well Tiverton Landfill Compliance Sampling

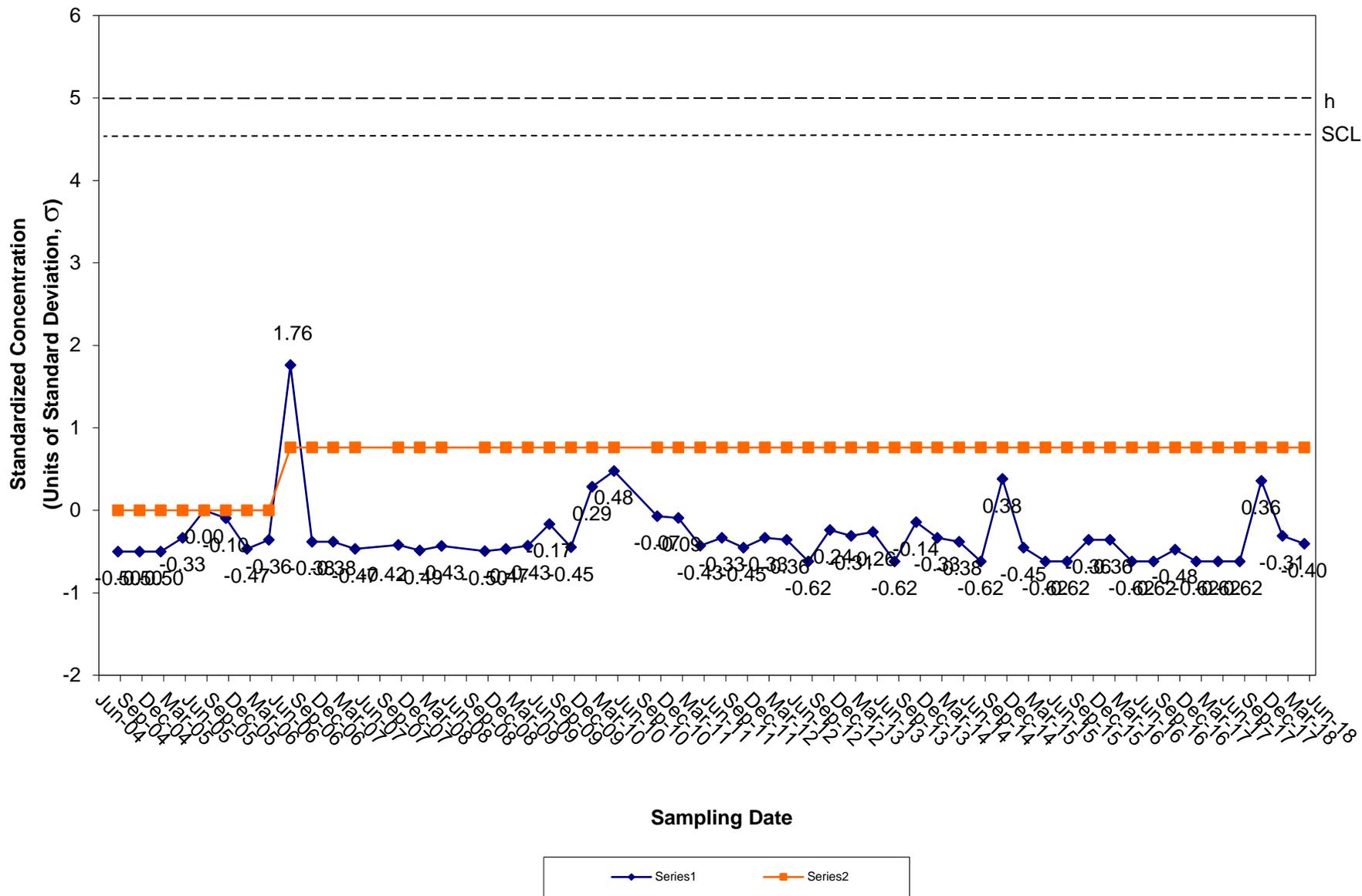


**ATTACHMENT NO. 5**  
**CUSUM METHOD STATISTICAL EVALUATION**

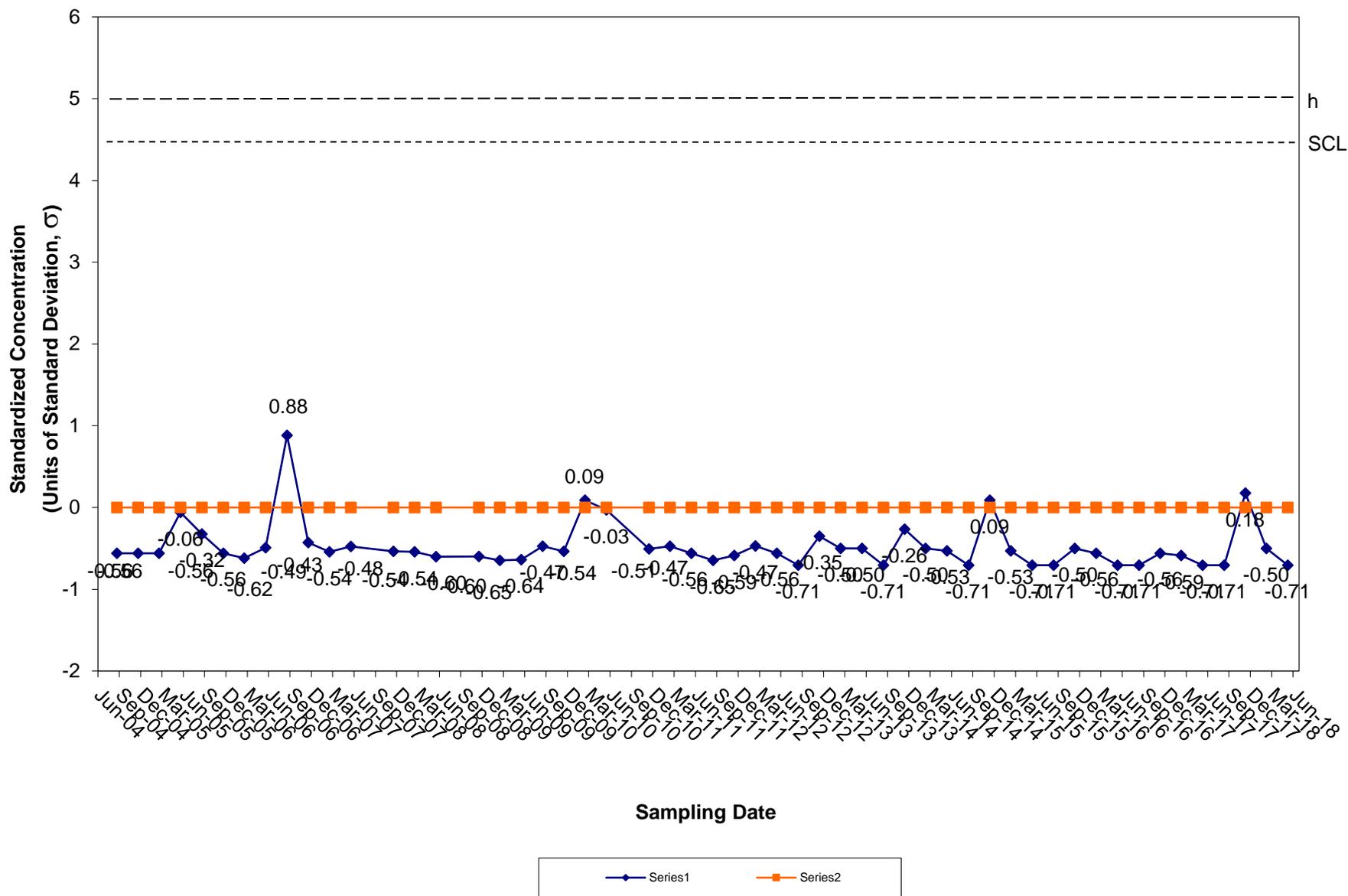
### CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-9



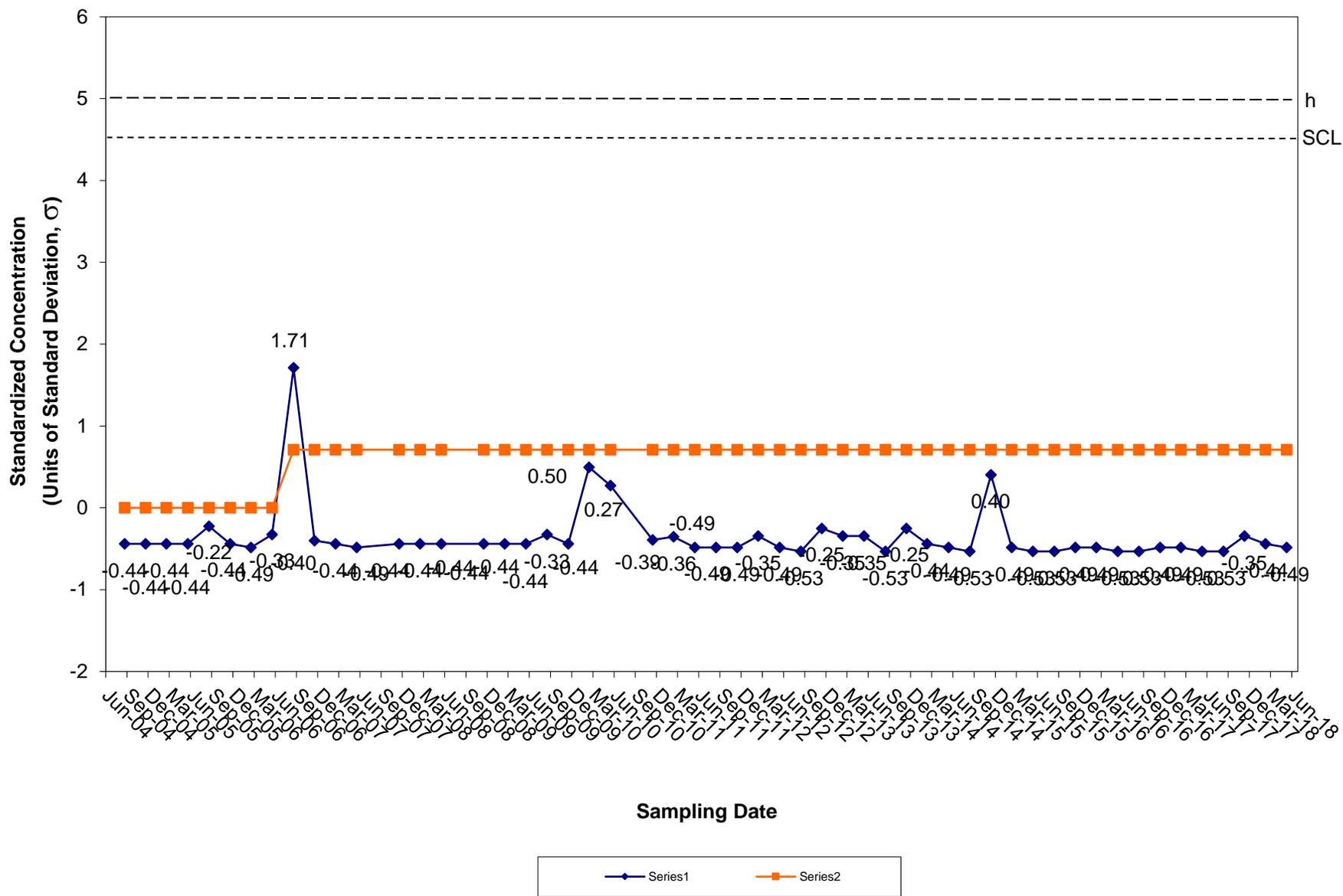
### CUSUM Control Chart for Barium Tiverton Landfill Groundwater Background Well OW-9



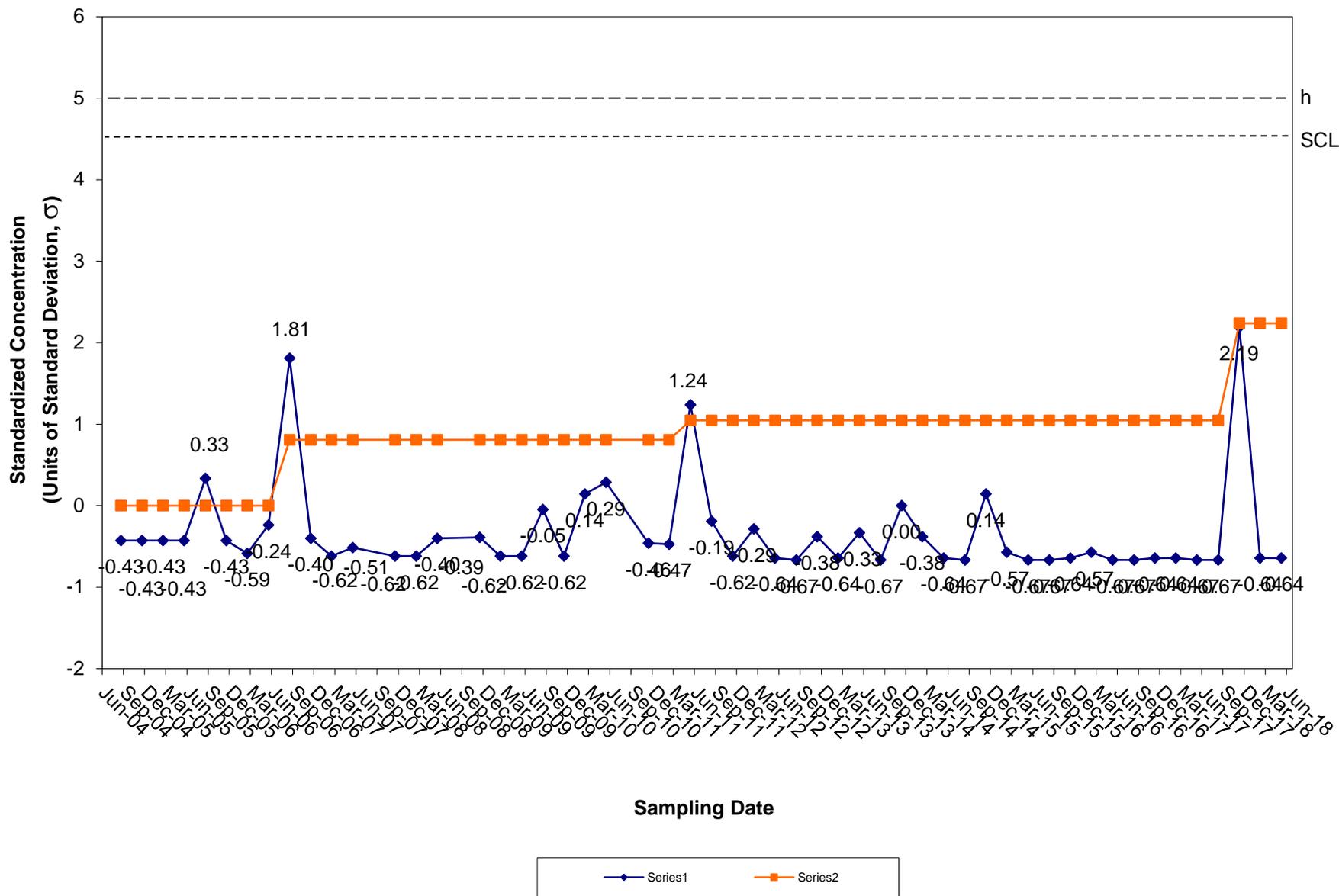
### CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Background Well OW-9



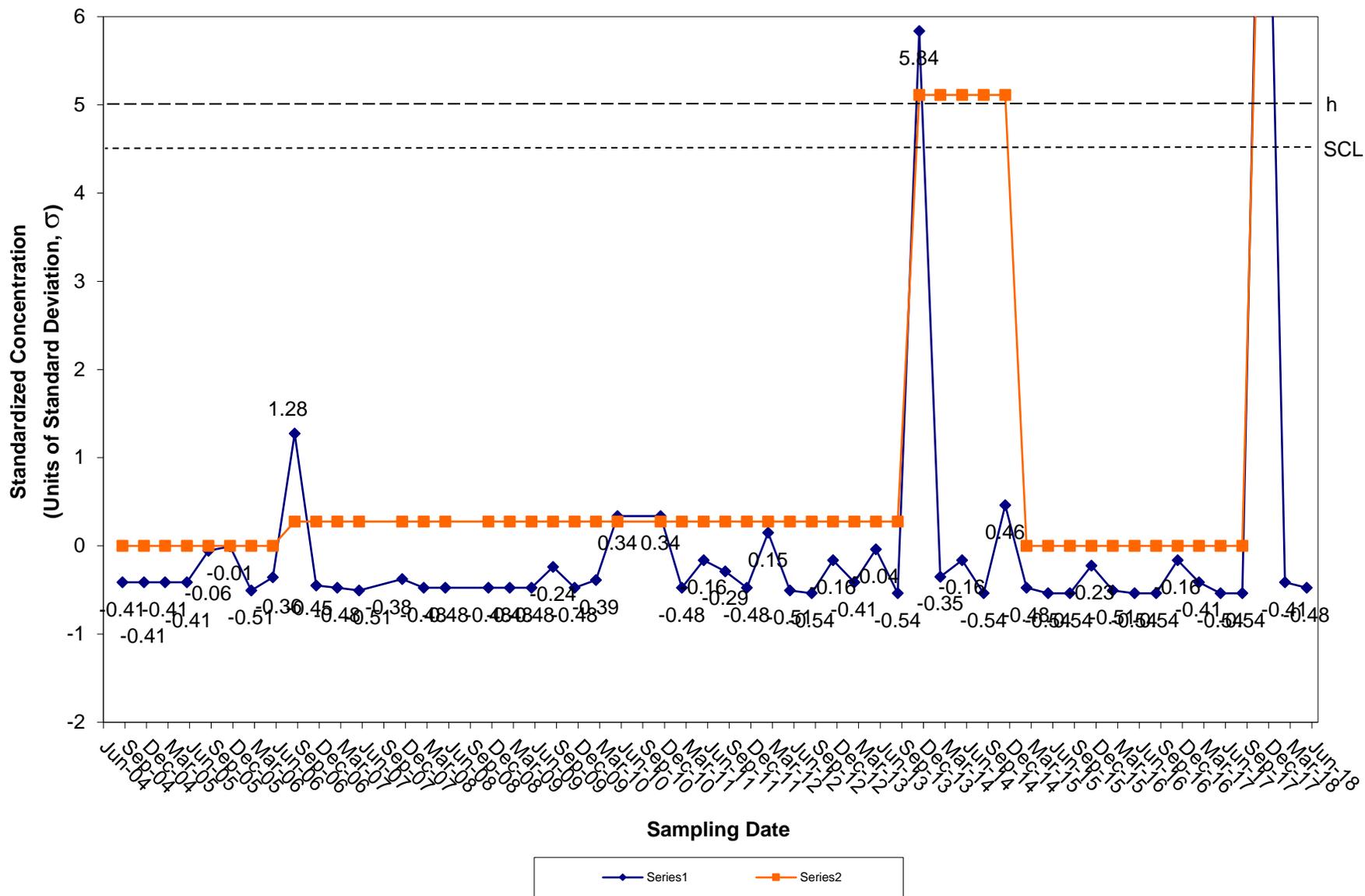
### CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Background Well OW-9



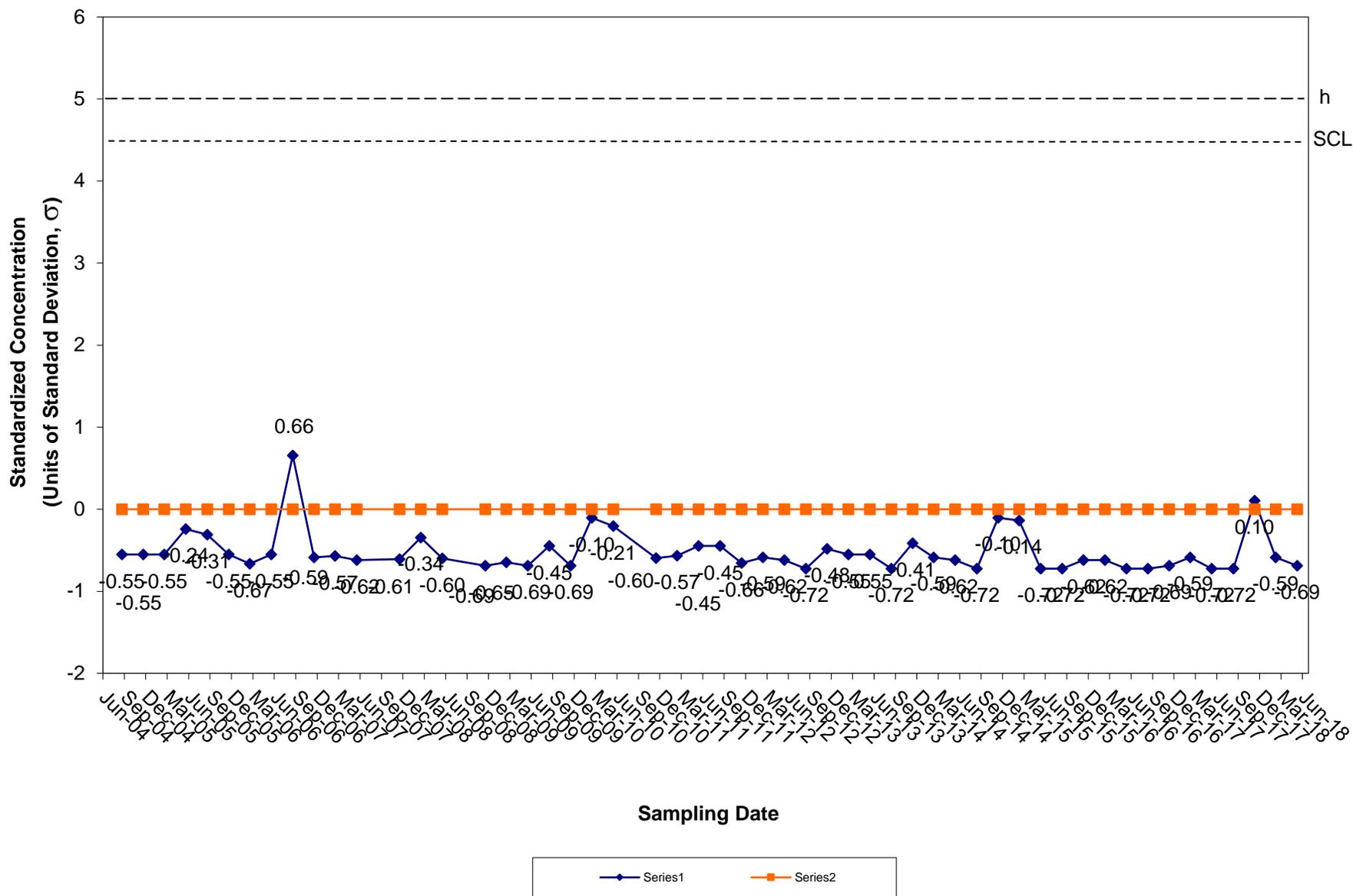
### CUSUM Control Chart for Copper Tiverton Landfill Groundwater Background Well OW-9



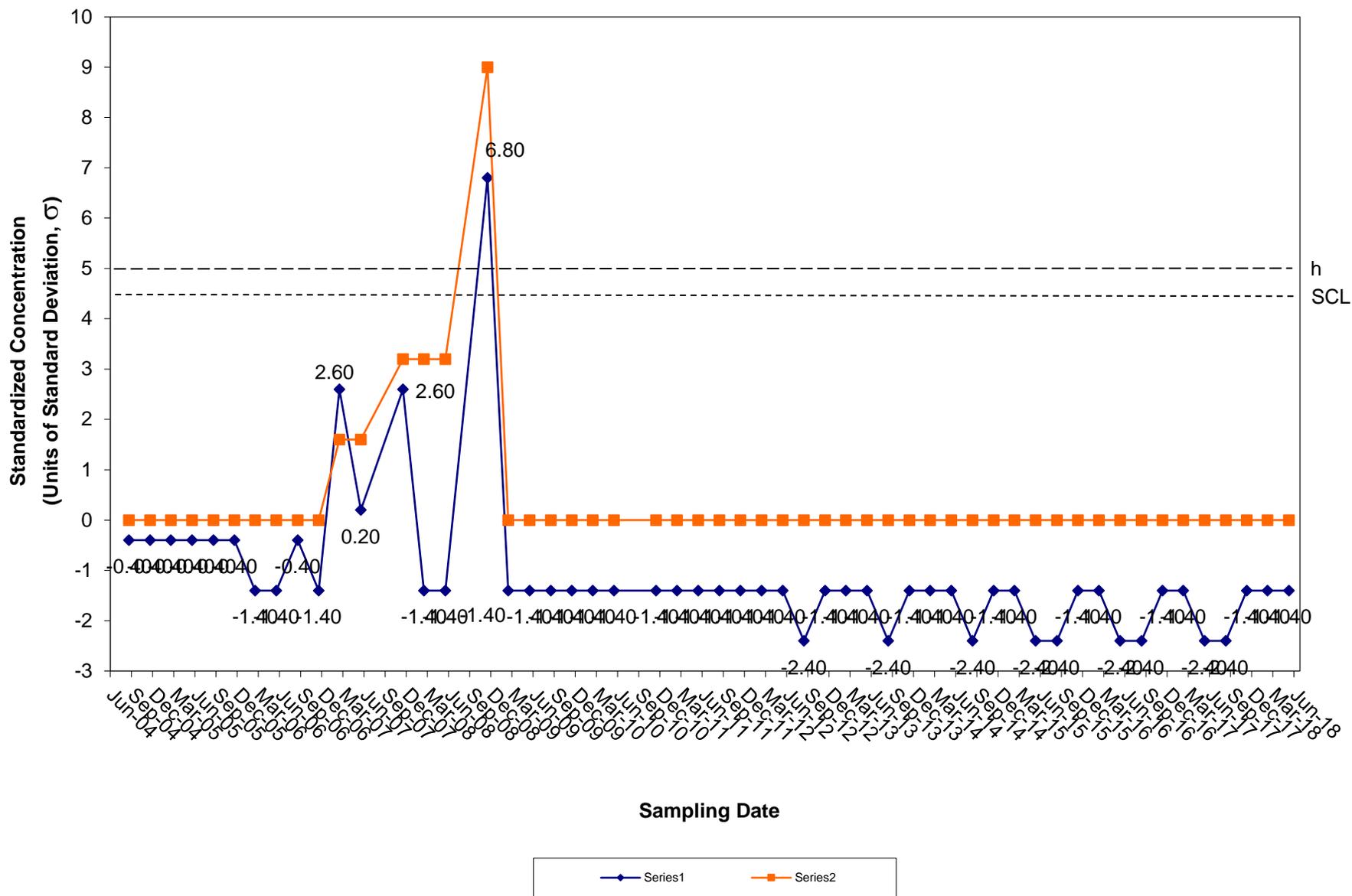
### CUSUM Control Chart for Lead Tiverton Landfill Groundwater Background Well OW-9



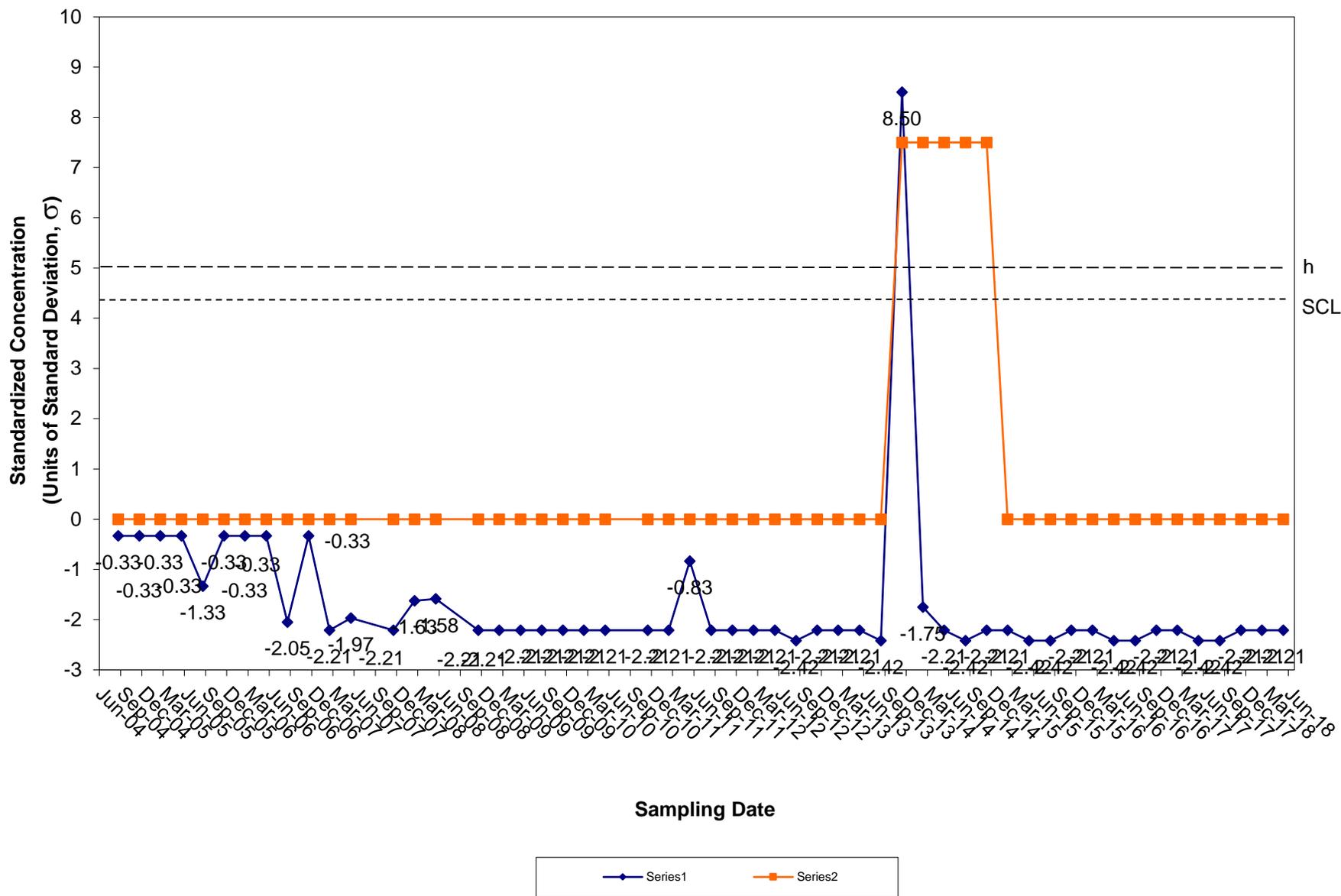
### CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Background Well OW-9



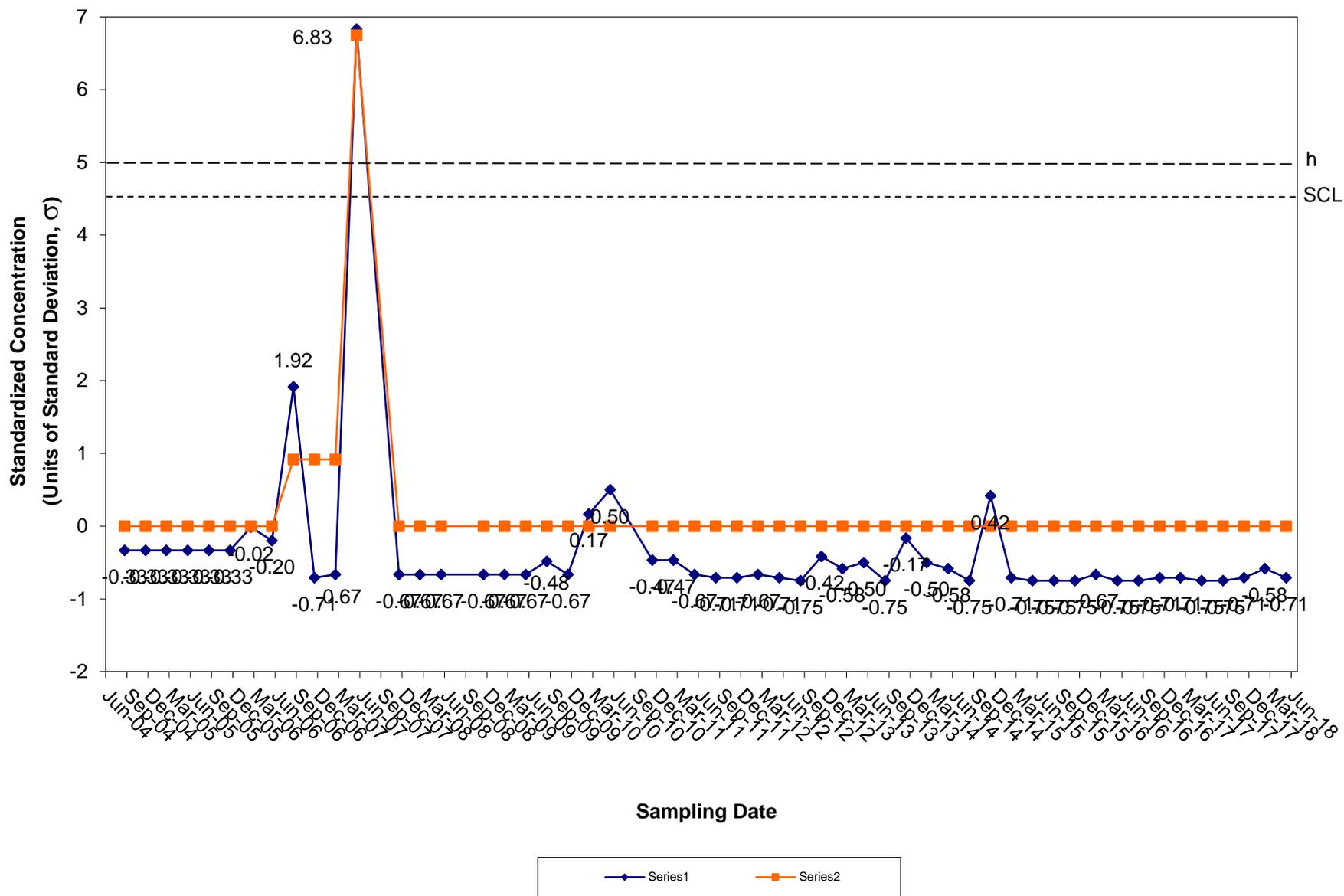
### CUSUM Control Chart for Thallium Tiverton Landfill Groundwater Background Well OW-9



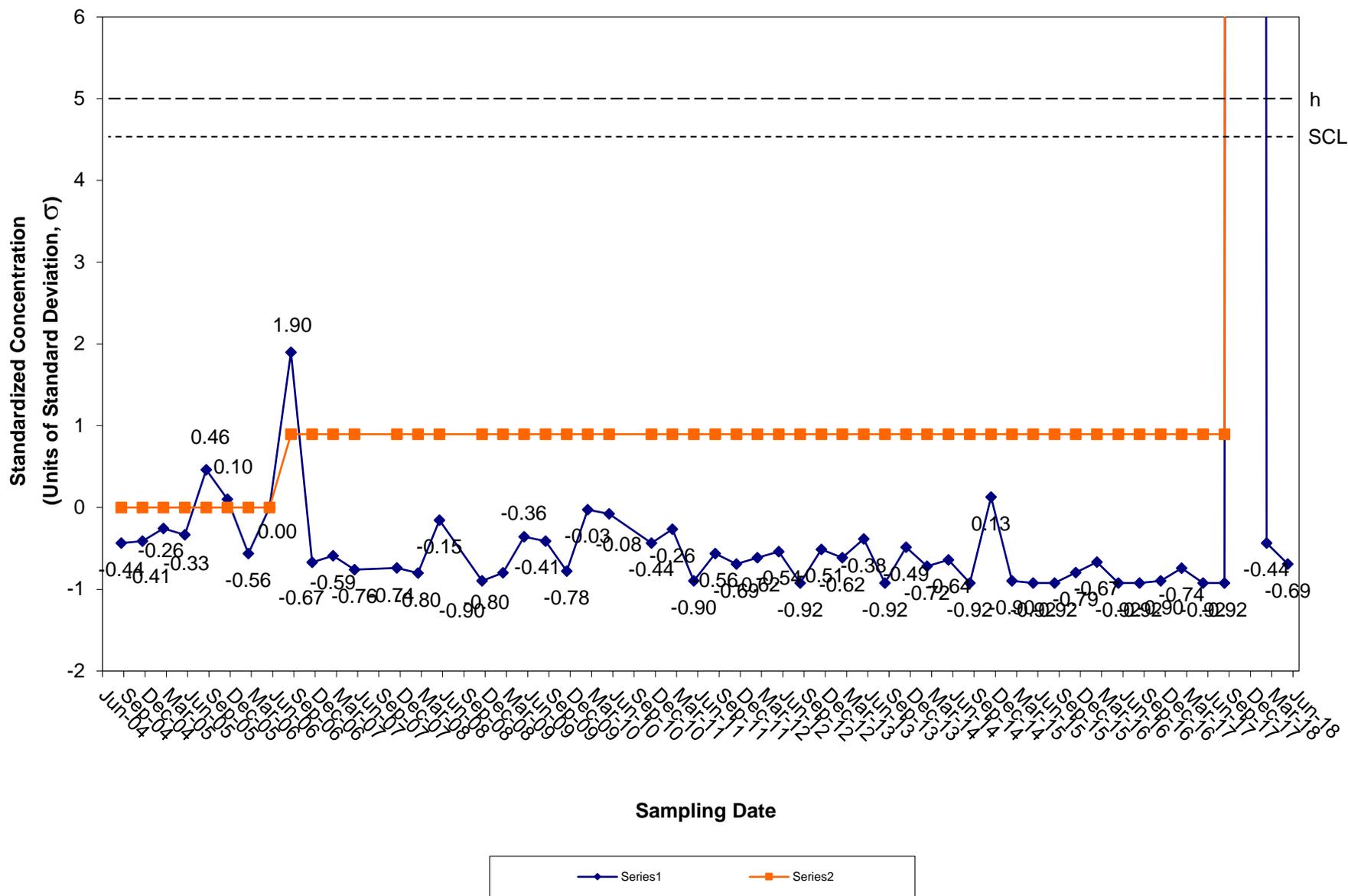
### CUSUM Control Chart for Tin Tiverton Landfill Groundwater Background Well OW-9



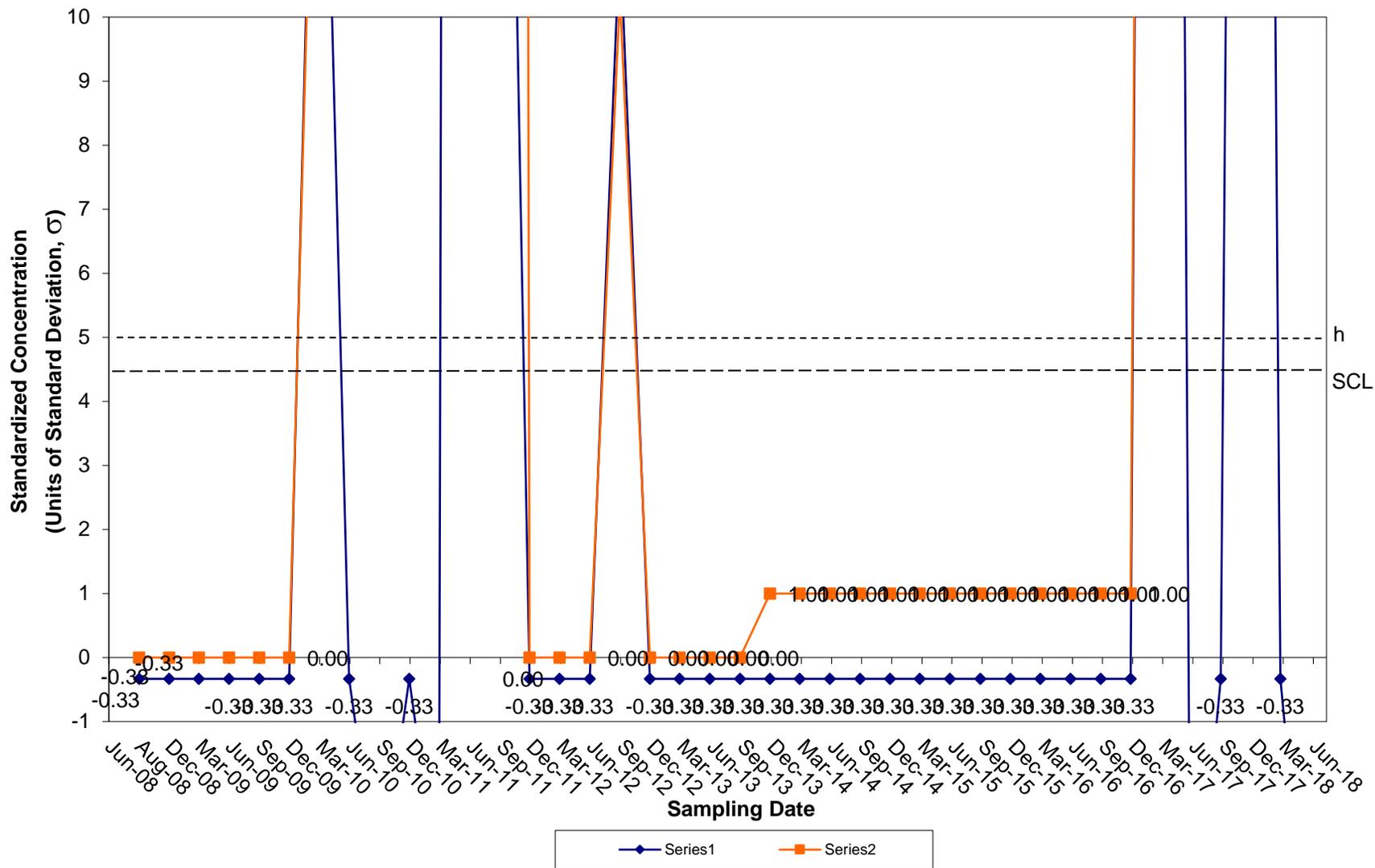
### CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Background Well OW-9



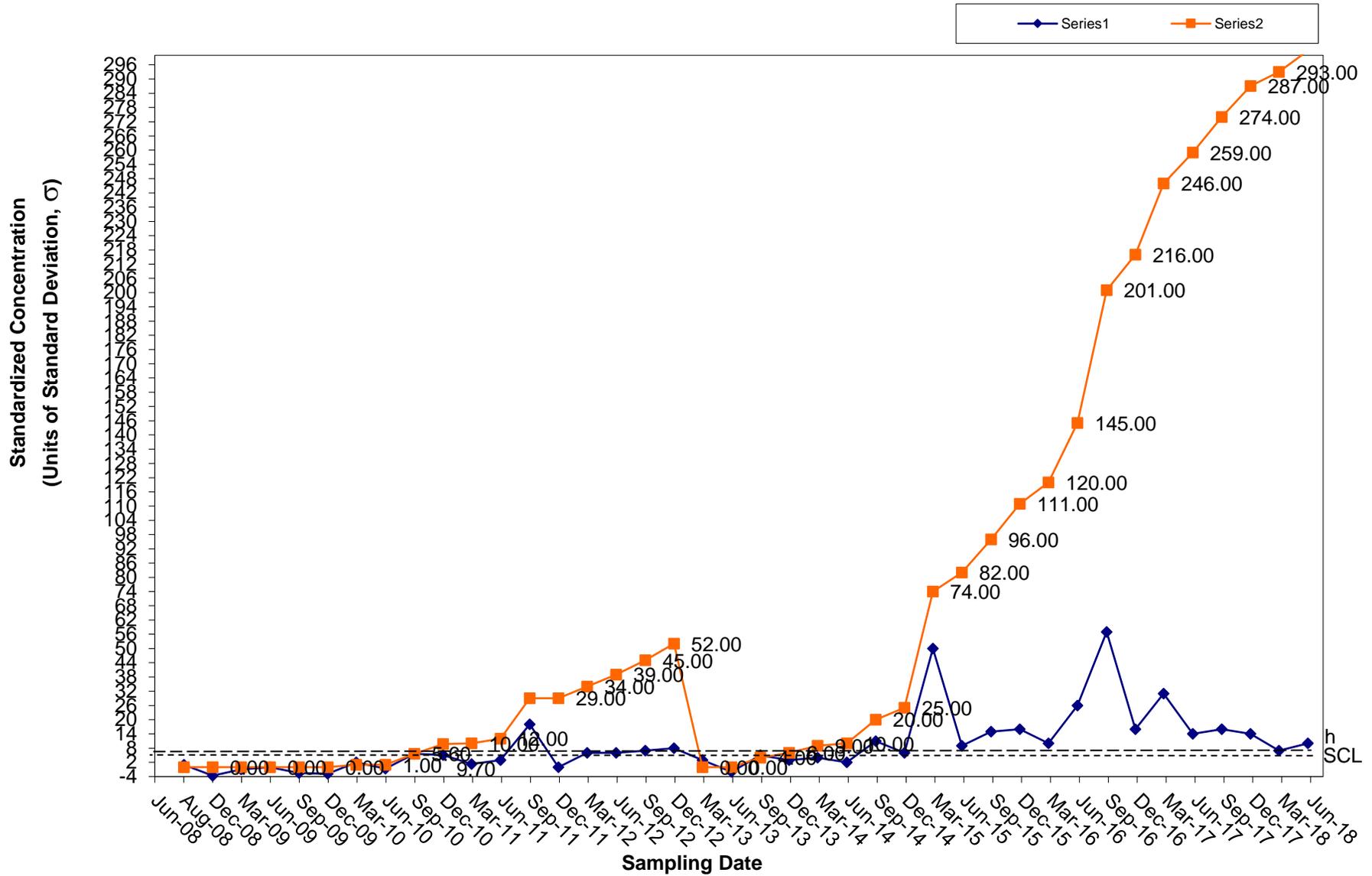
### CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Background Well OW-9



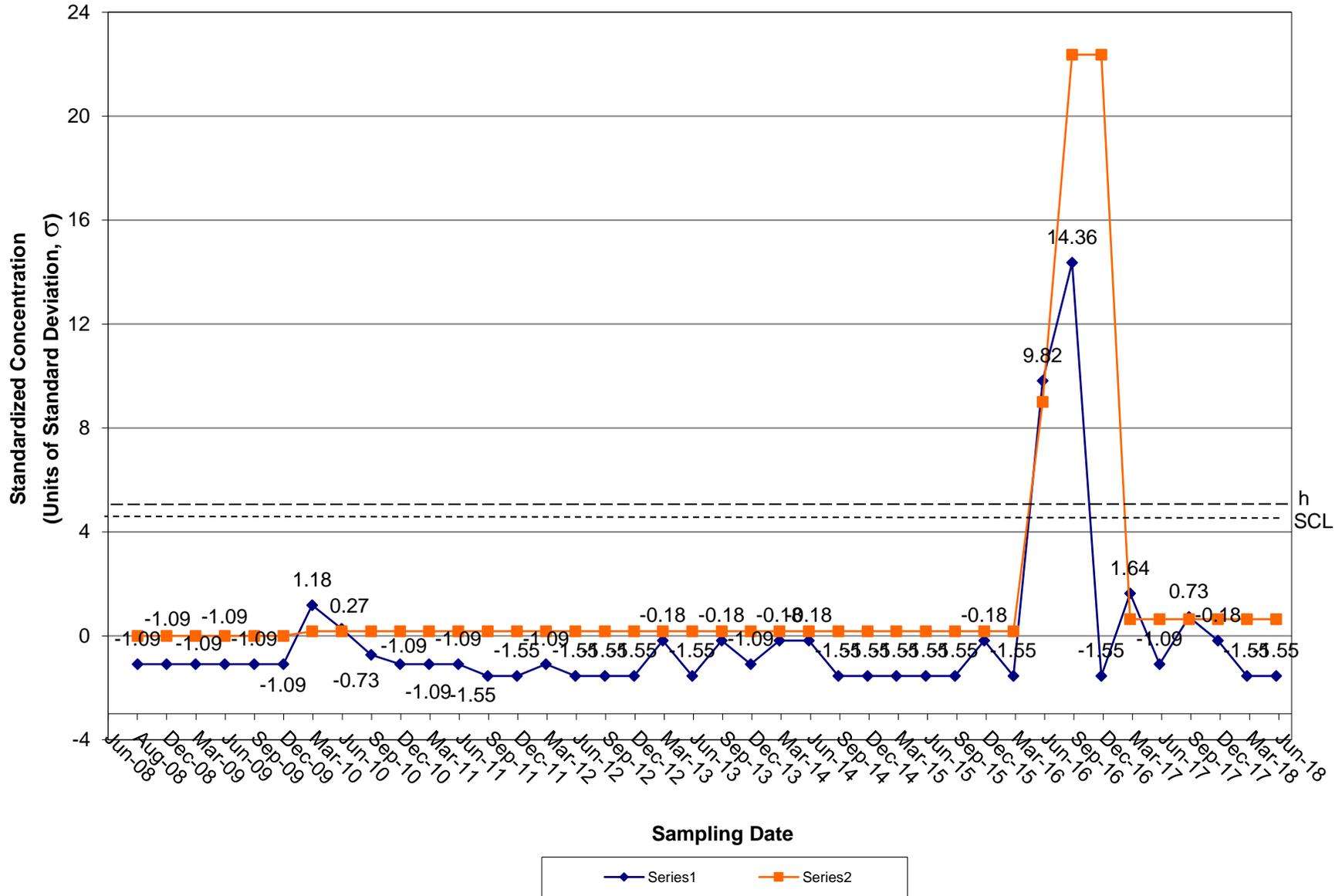
### CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-12



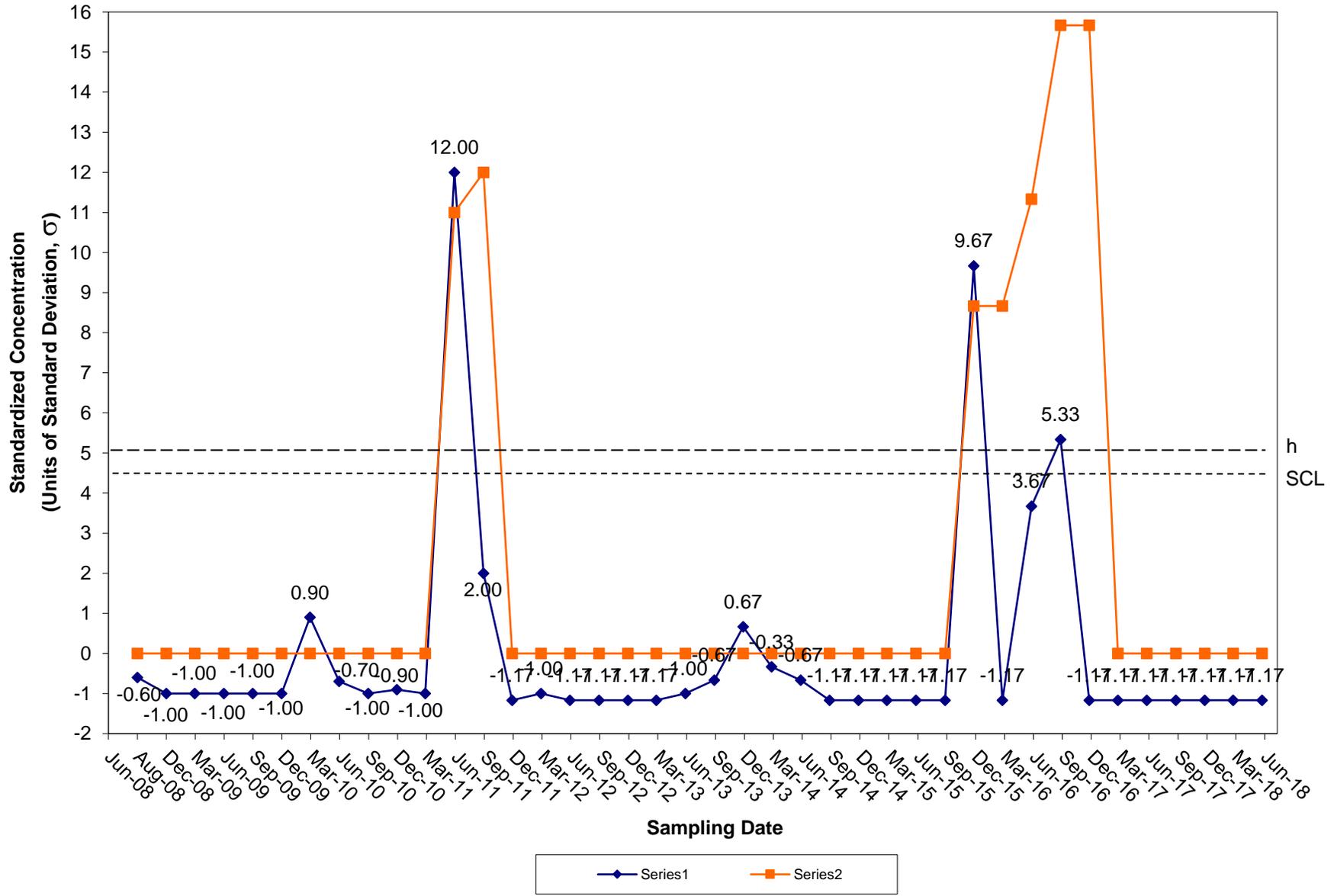
### CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-12



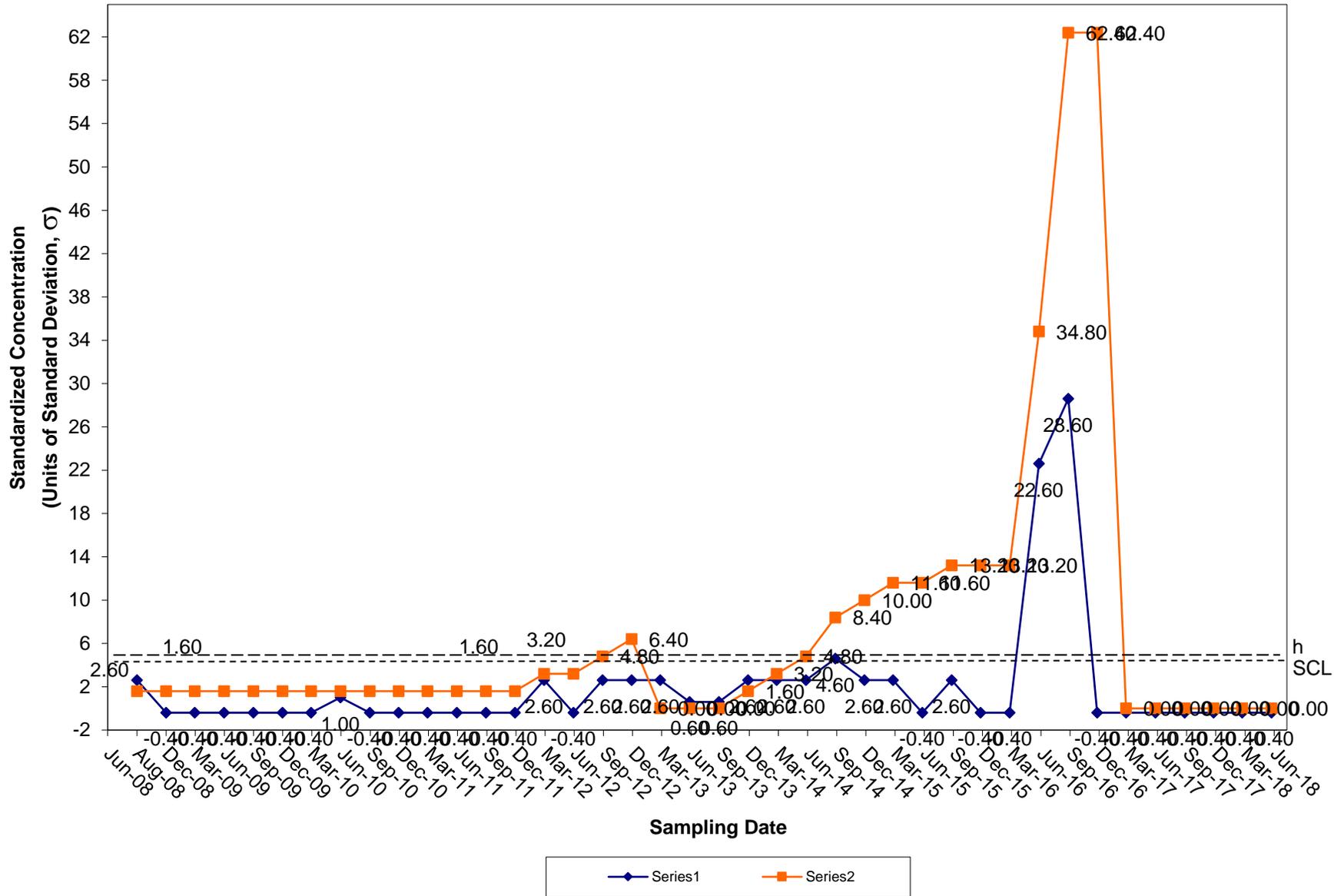
### CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Compliance Well OW-12



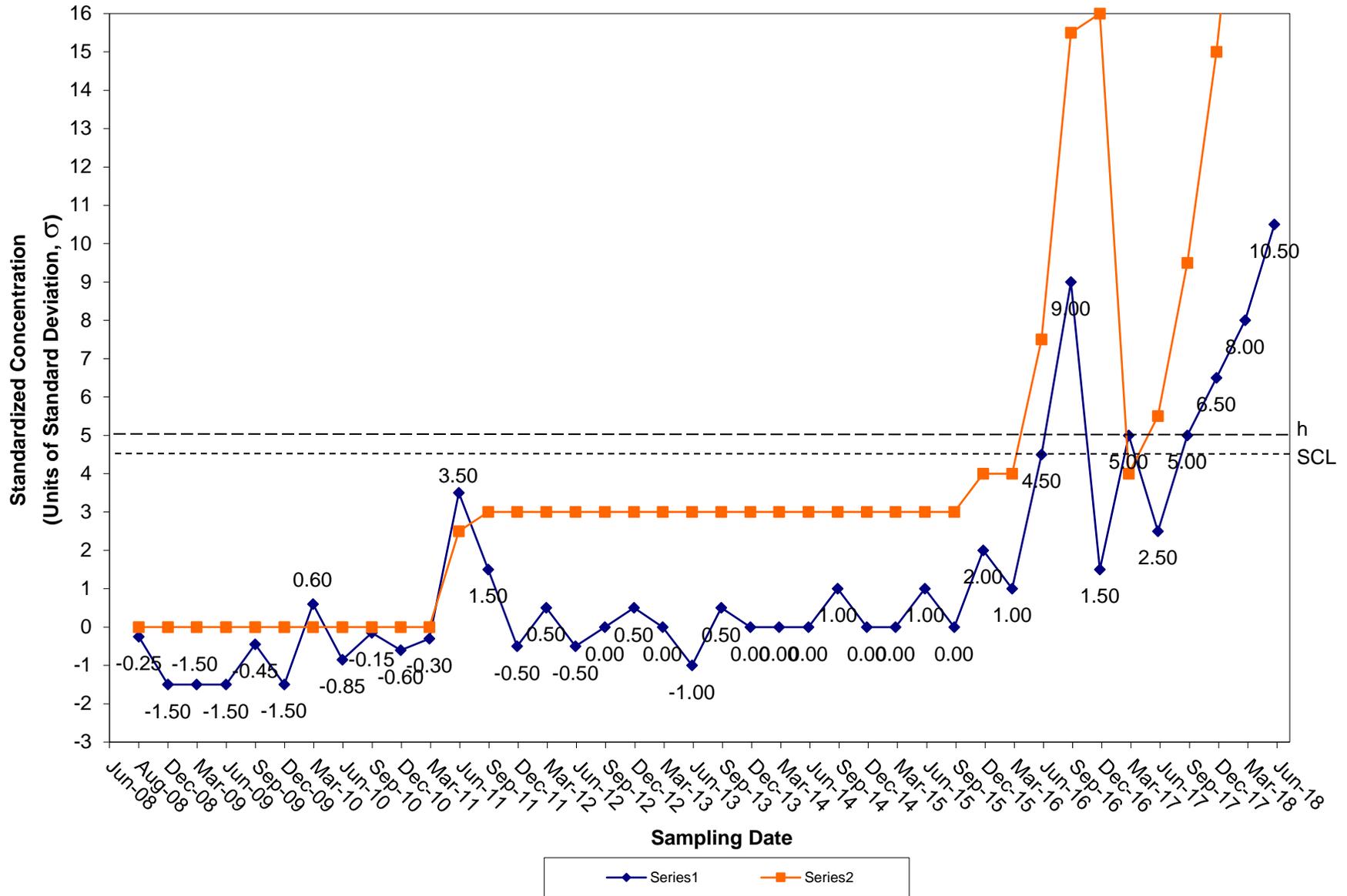
### CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-12



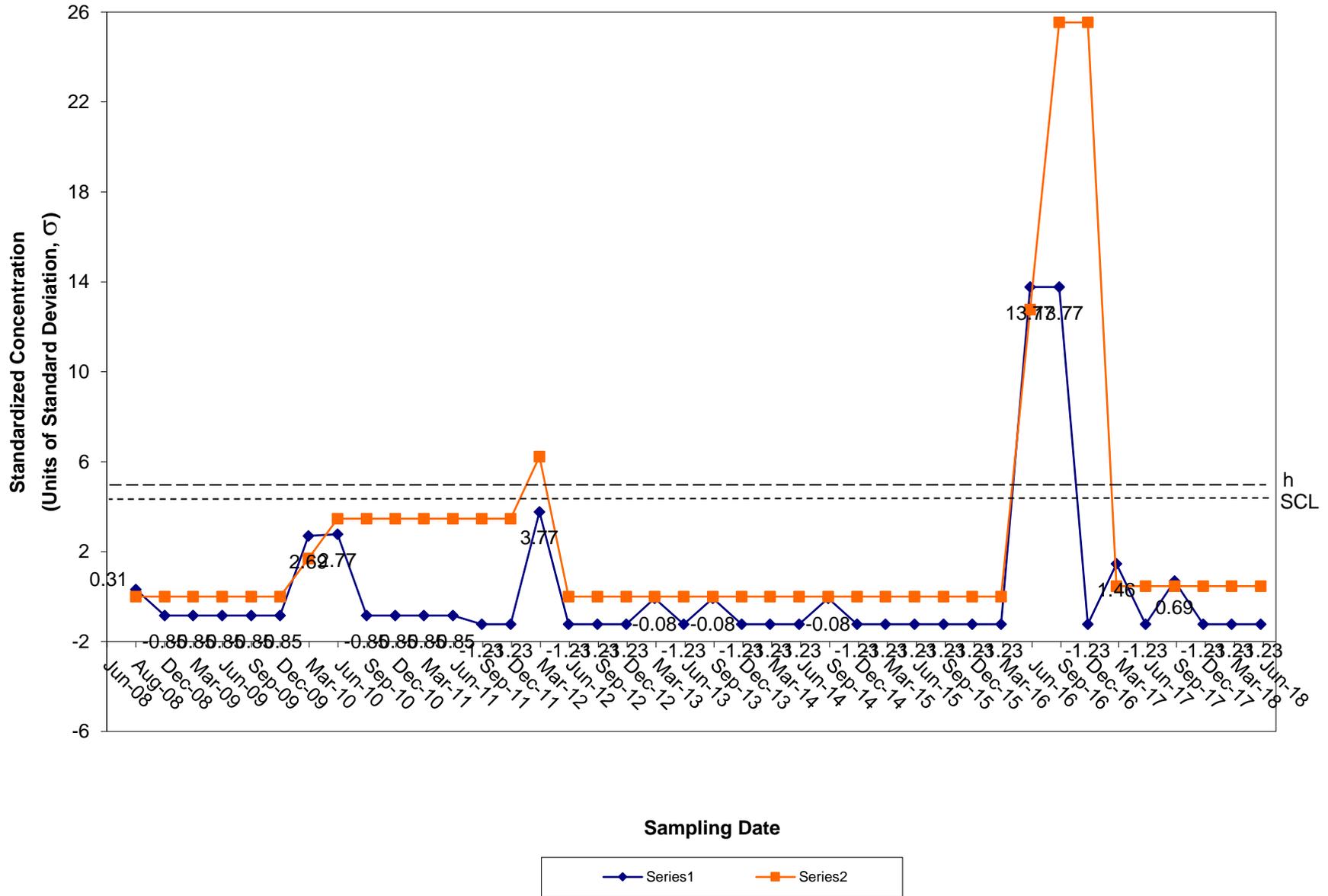
### CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-12



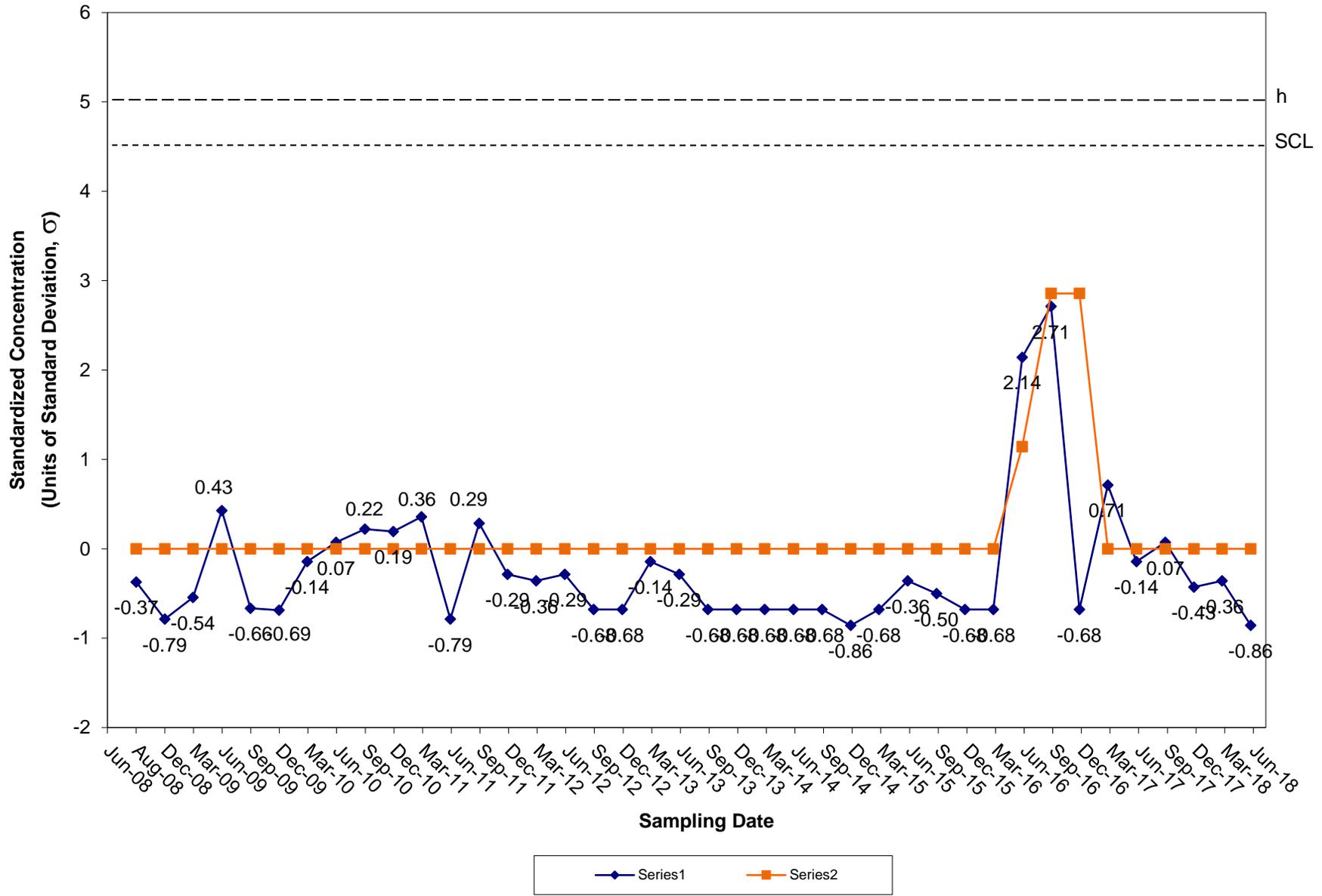
### CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-12



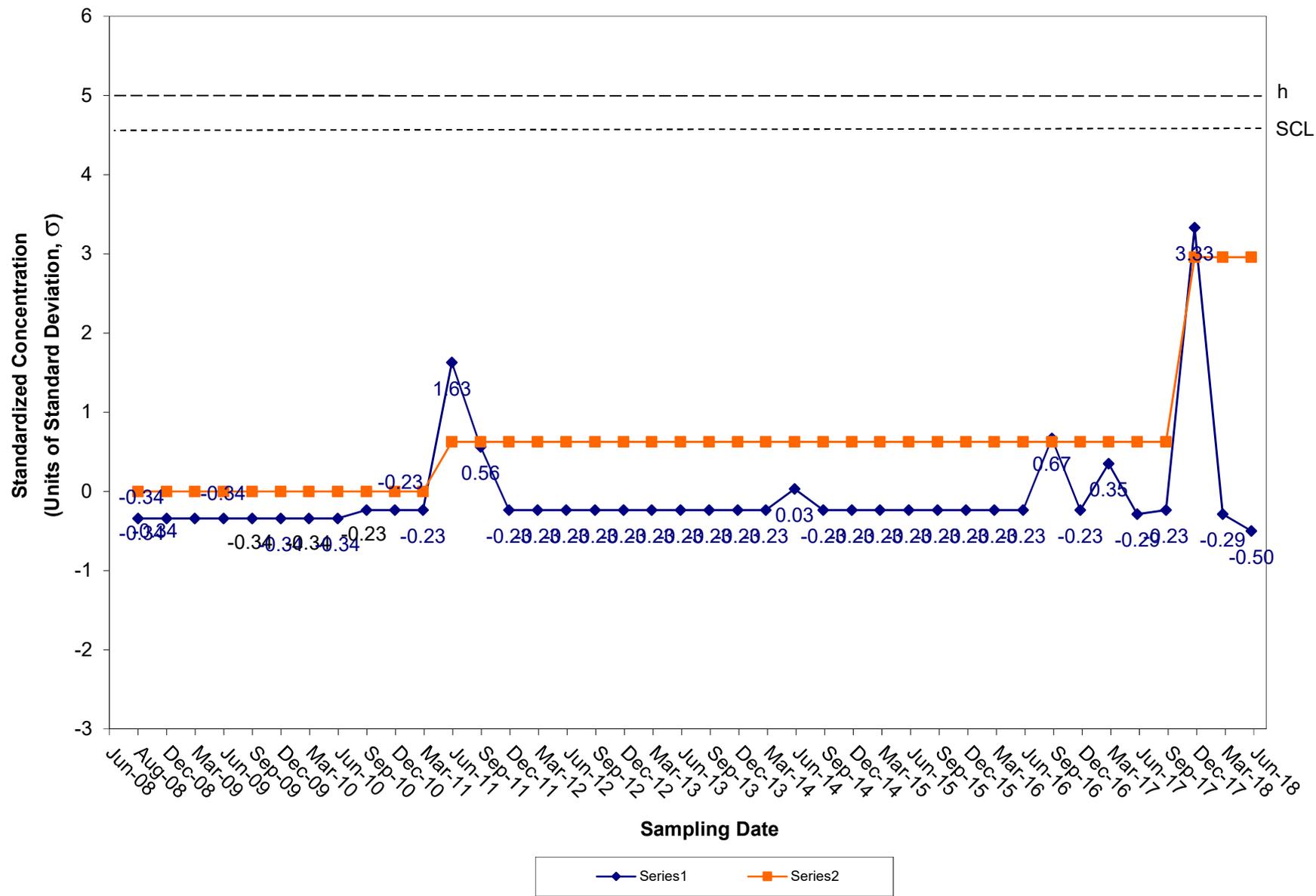
### CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-12



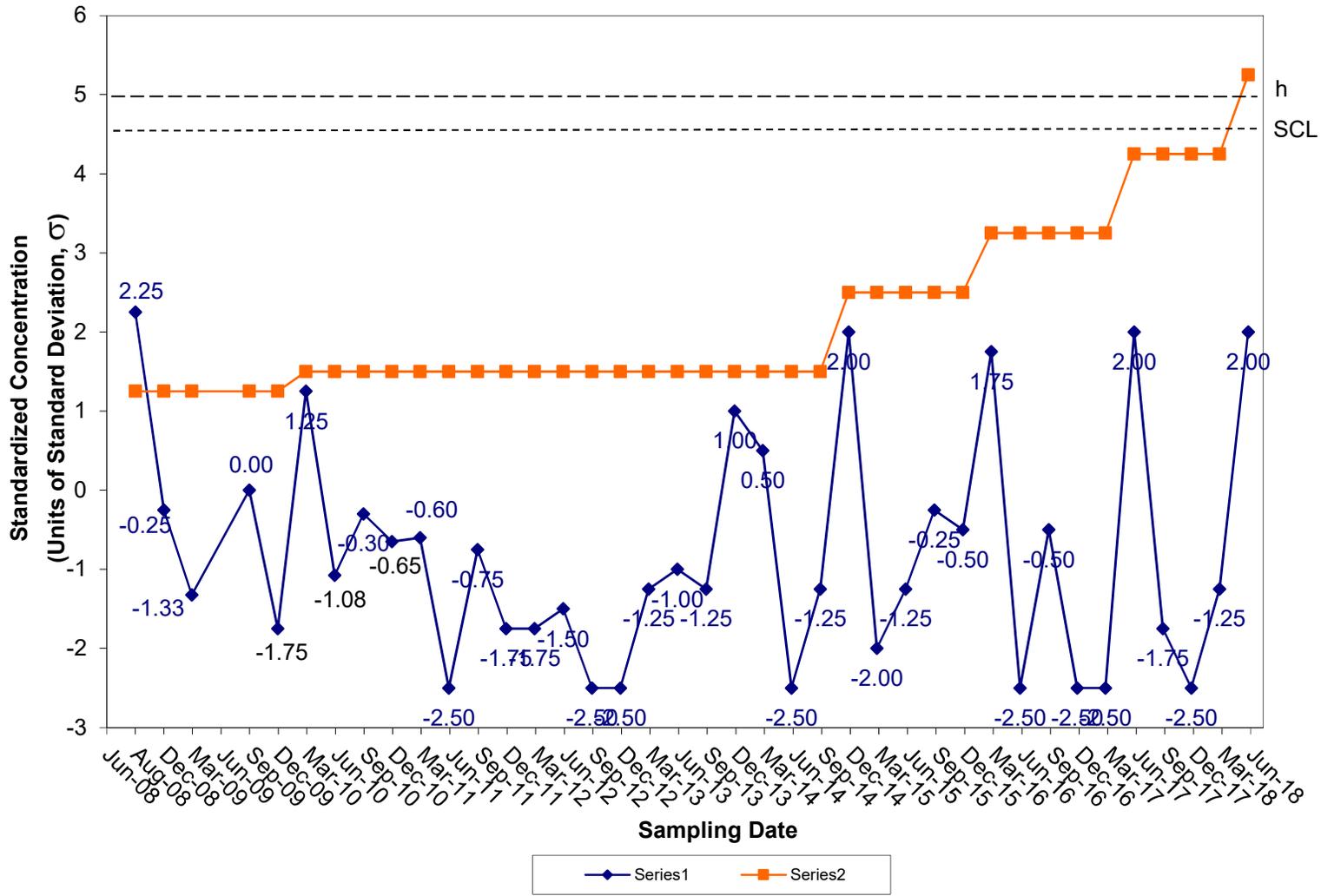
### CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-12



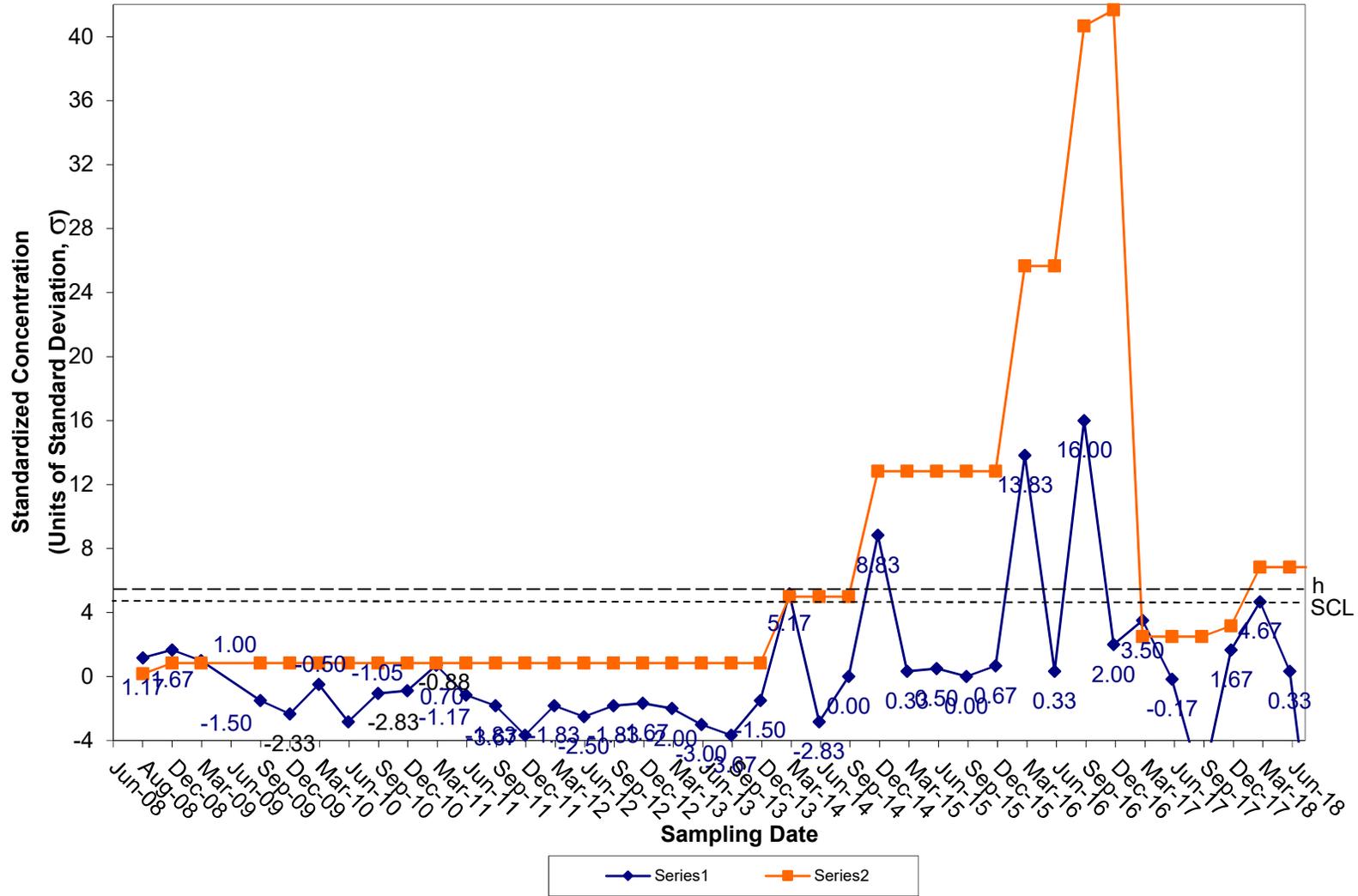
### CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-13



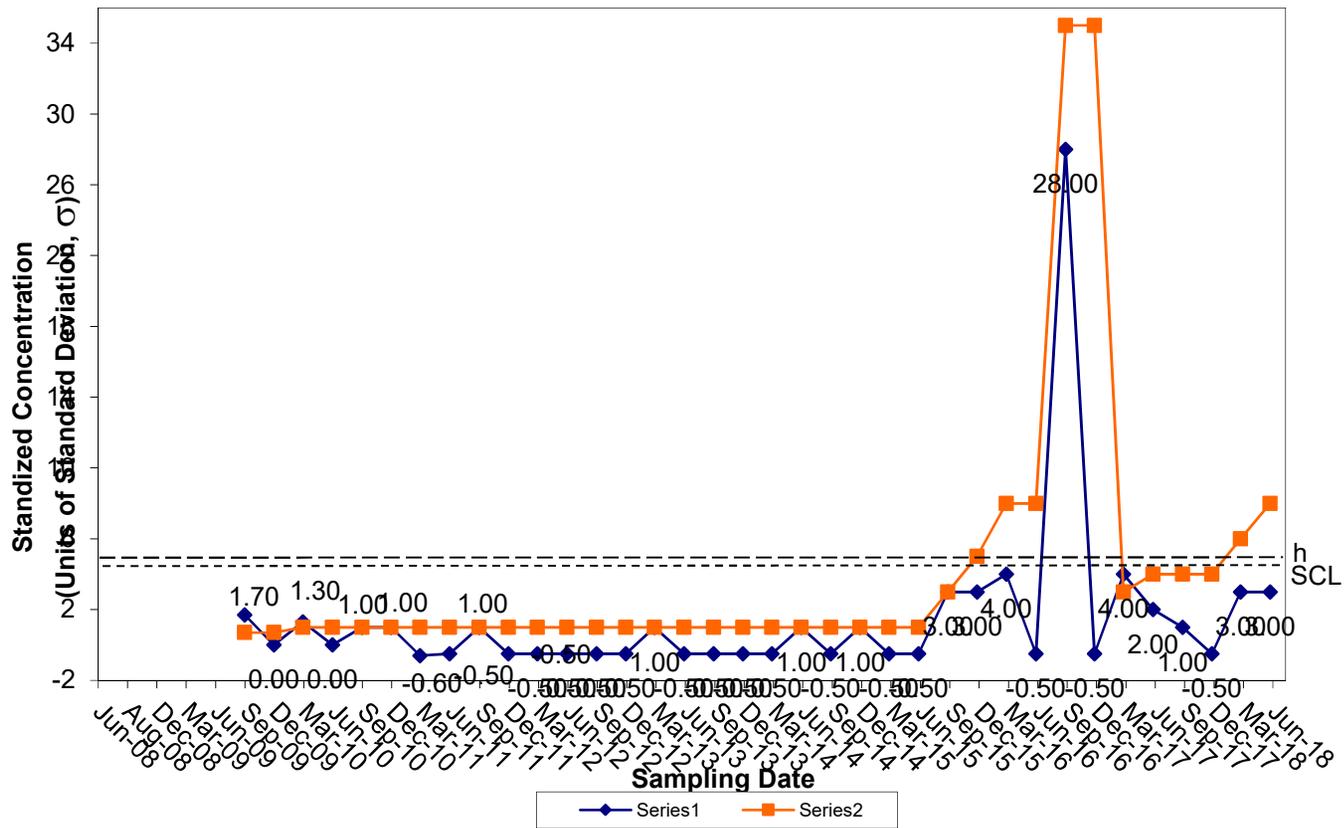
### CUSUM Control Chart for Arsenic Tiverton Landfill Groundwater Compliance Well OW-13



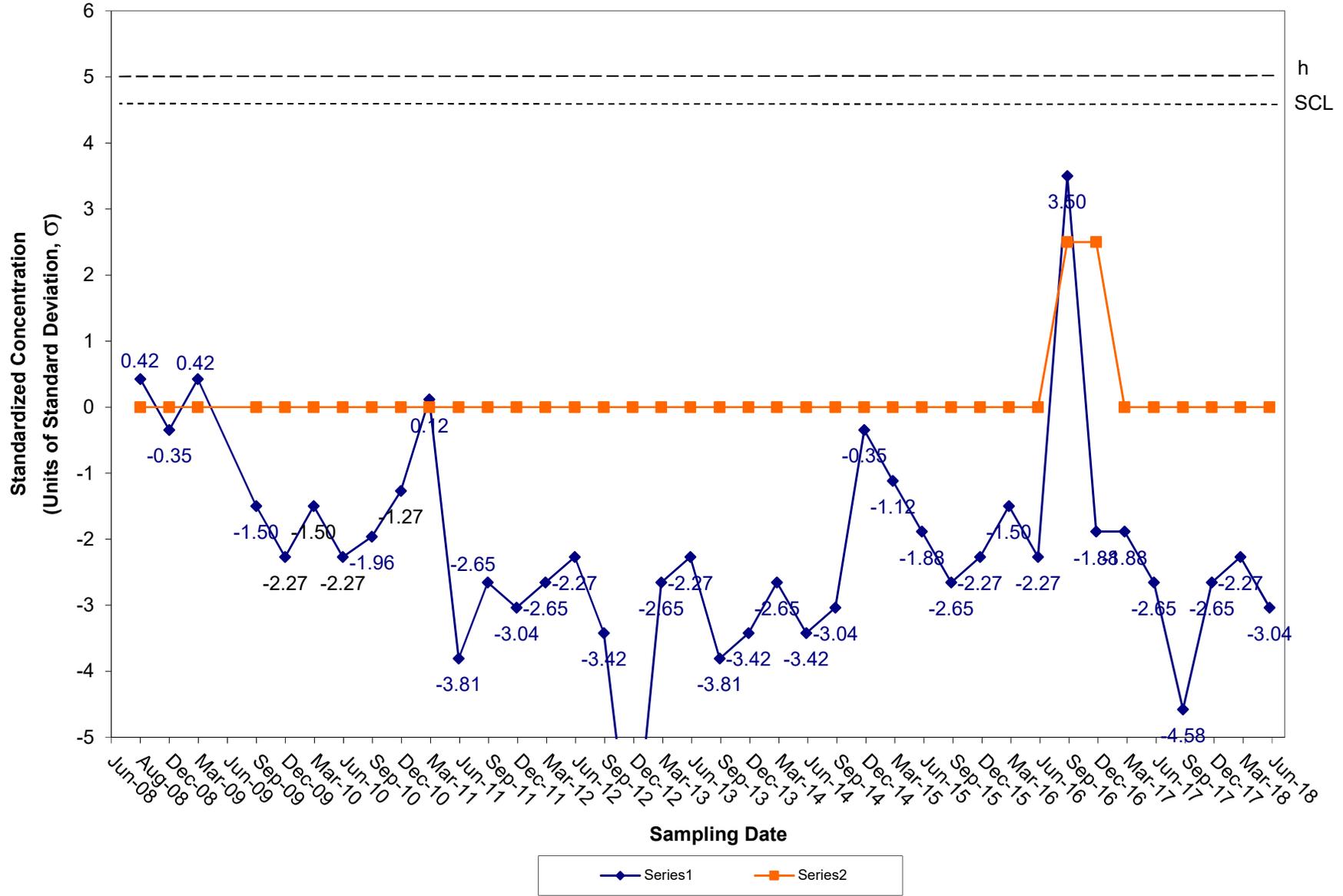
### CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-13



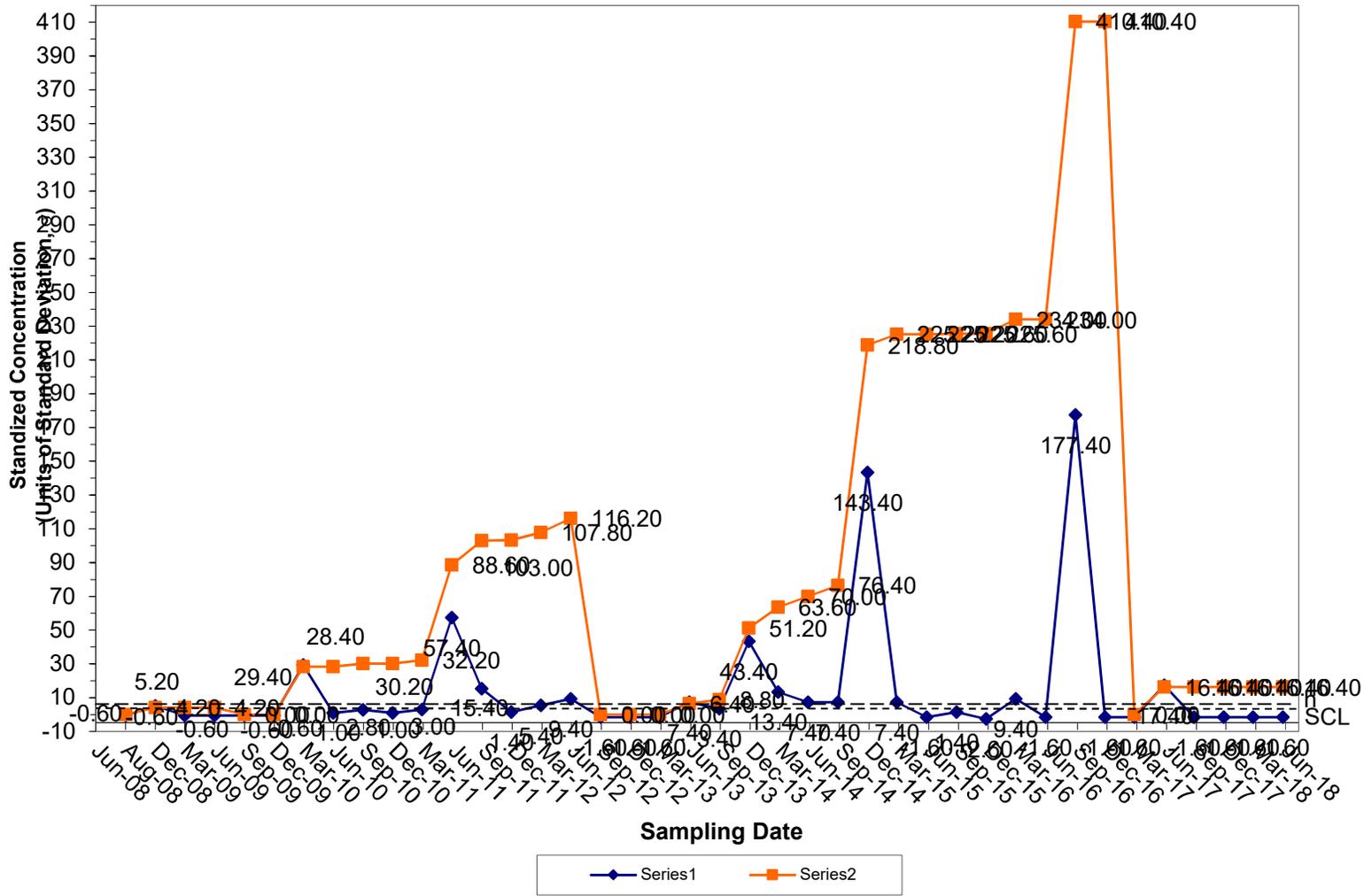
### CUSUM Control Chart for Cadmium Tiverton Landfill Groundwater Compliance Well OW-13



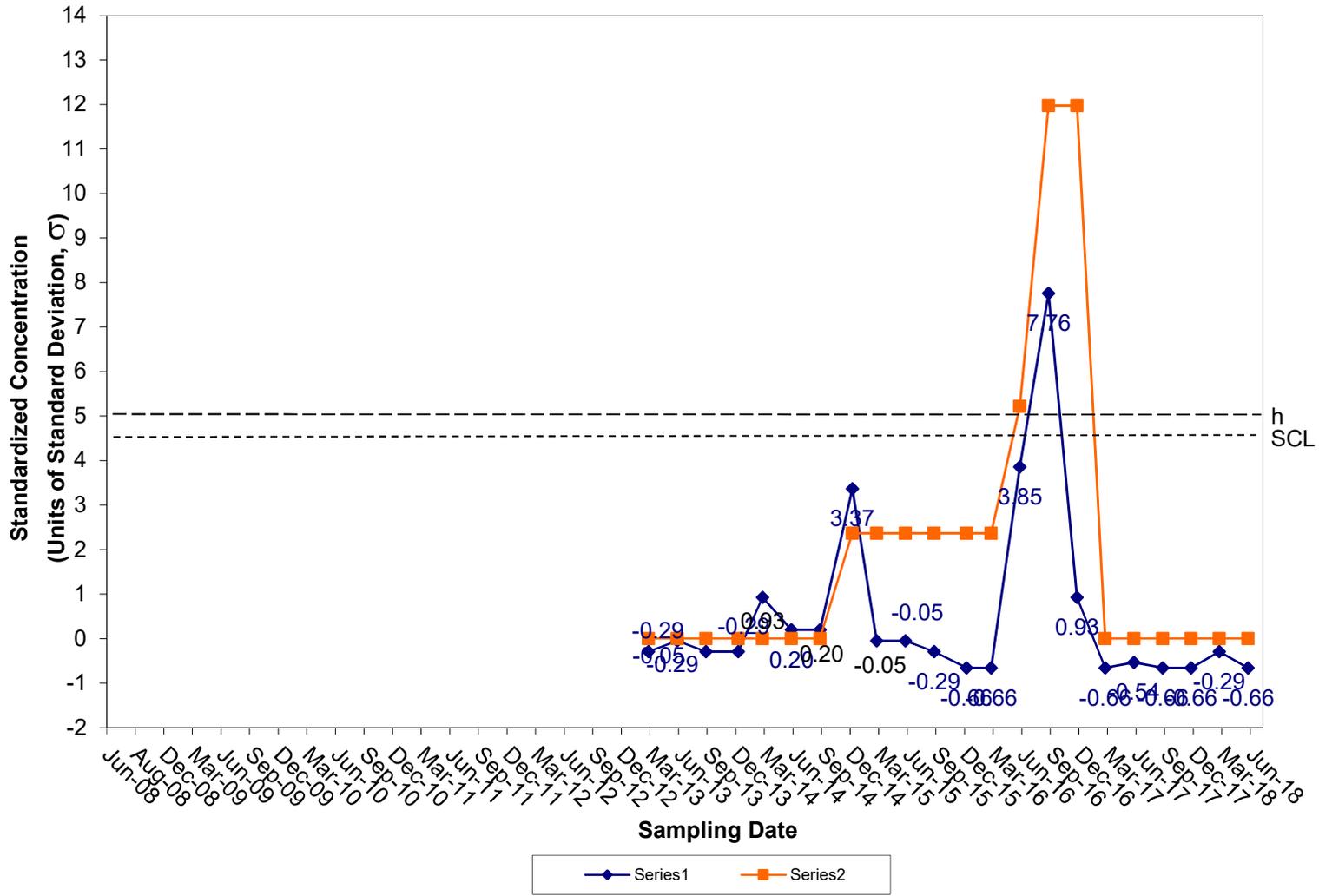
### CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Compliance Well OW-13



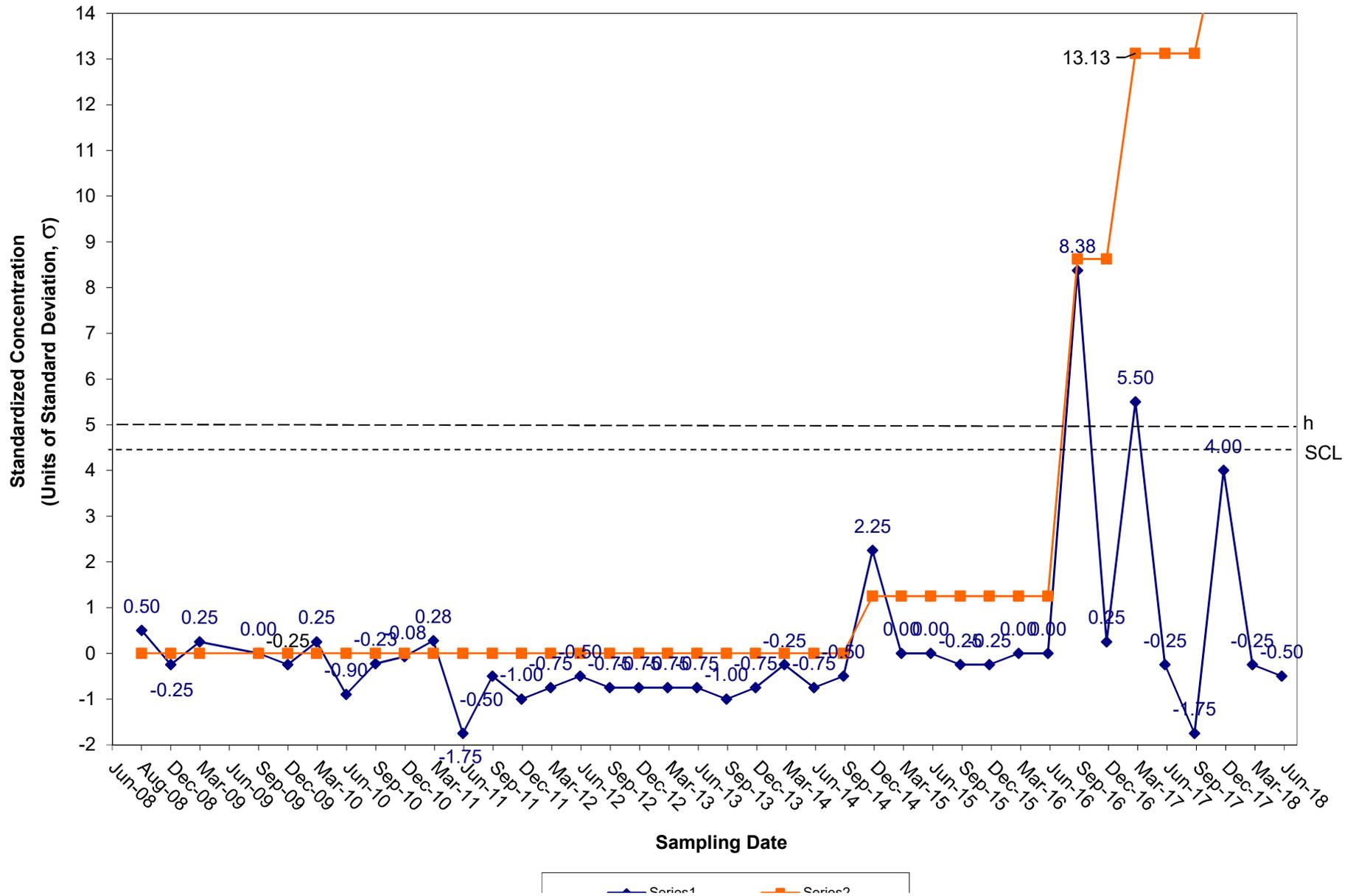
### CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-13



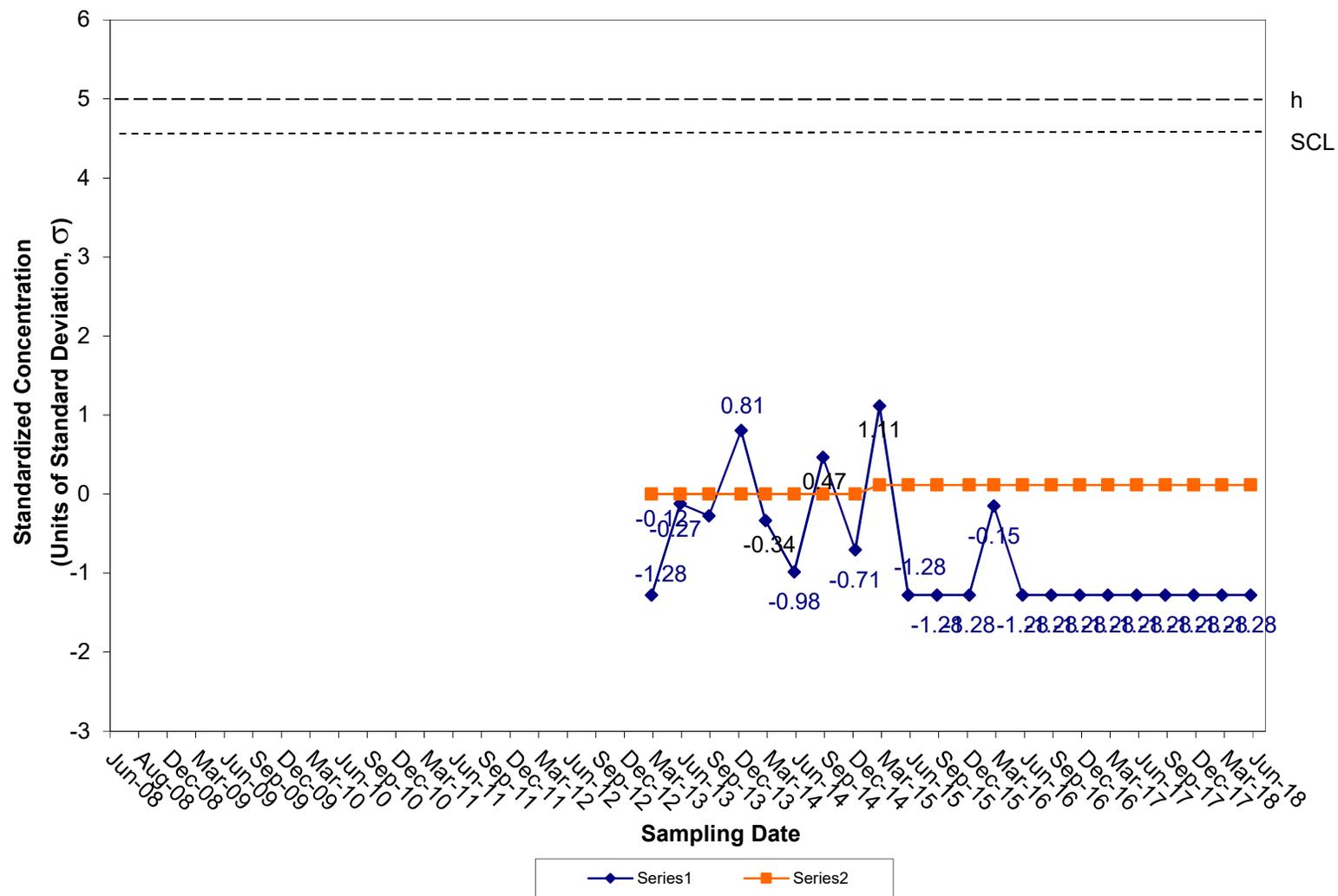
### CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-13



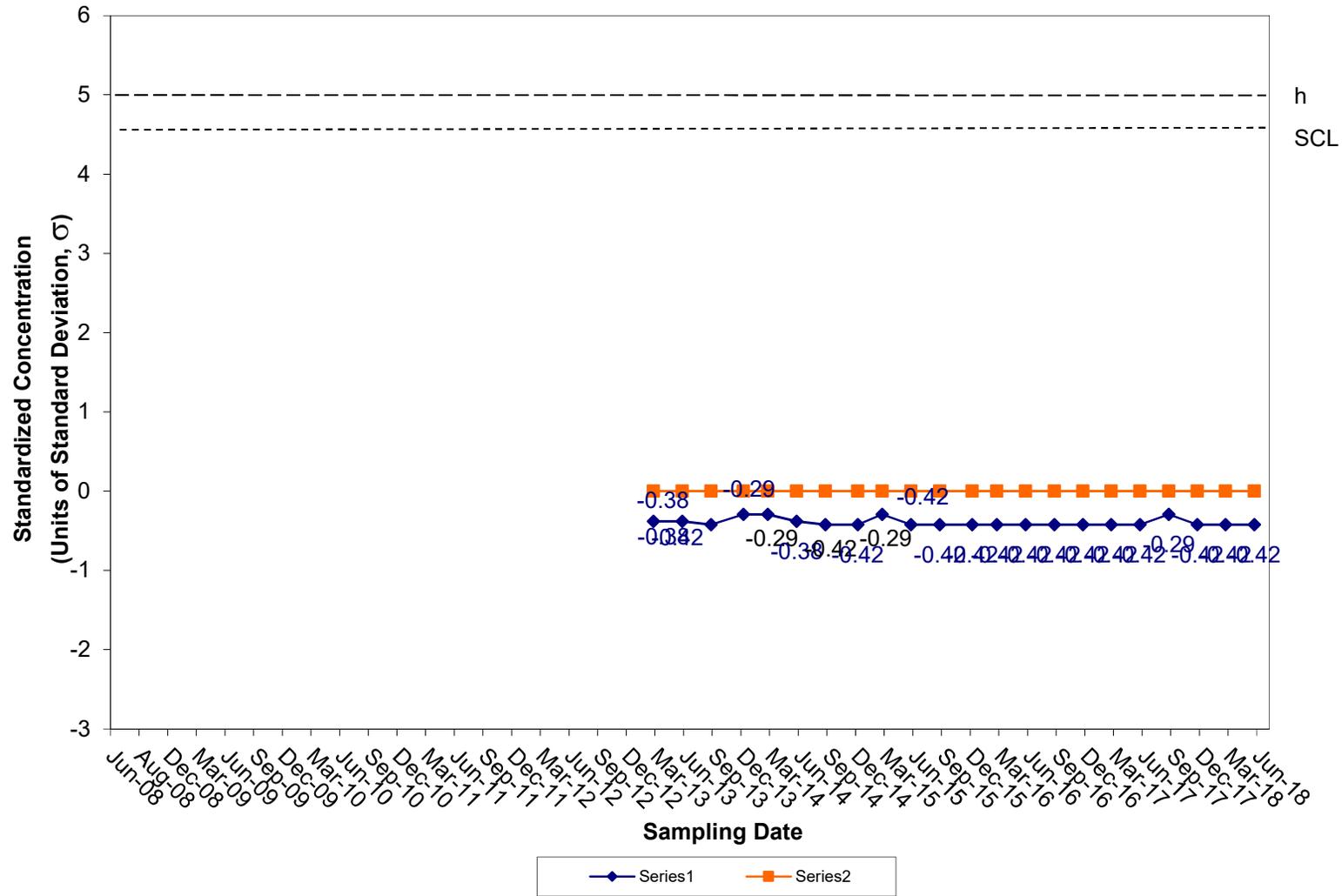
### CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-13



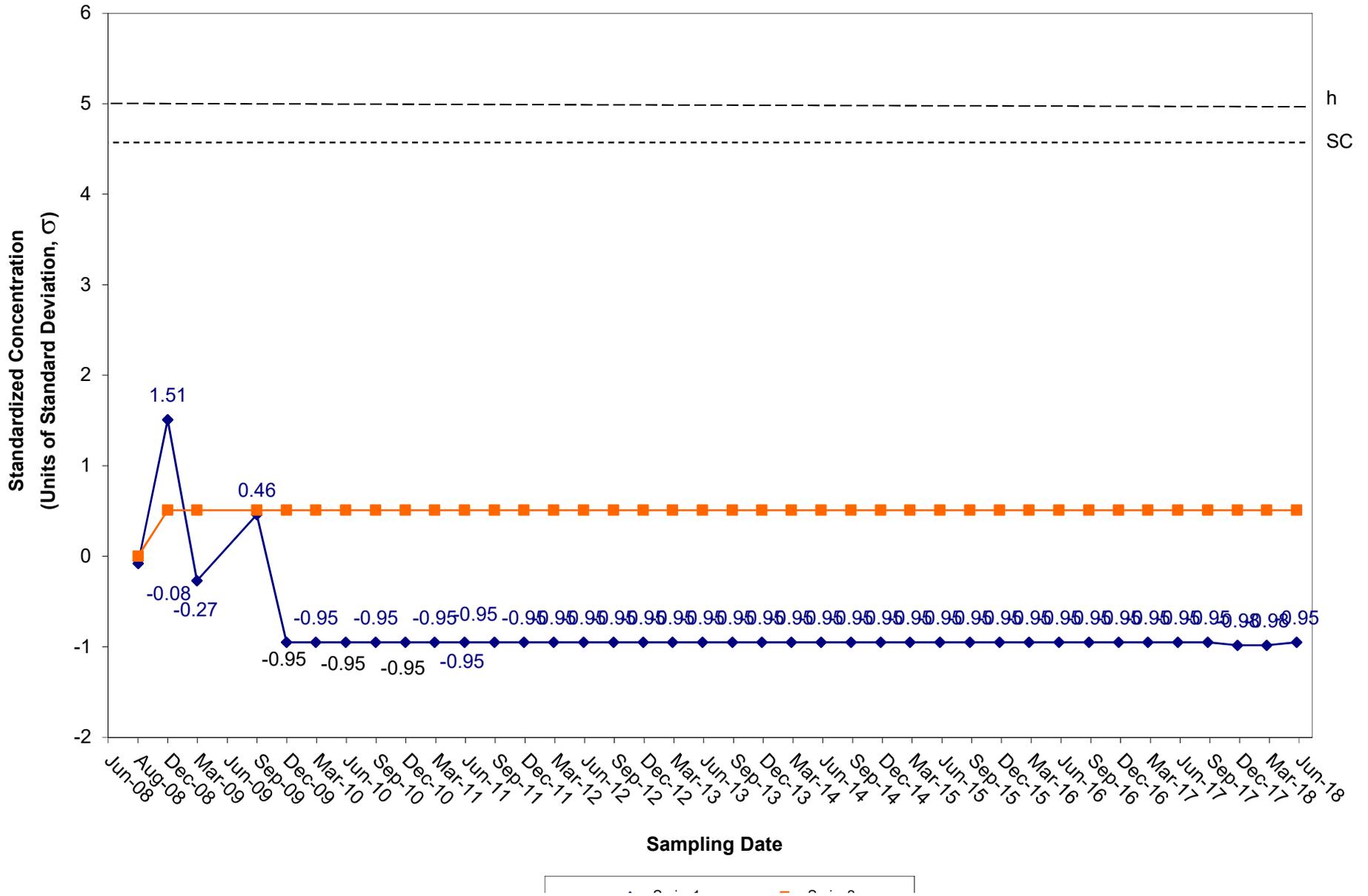
### CUSUM Control Chart for Selenium Tiverton Landfill Groundwater Compliance Well OW-13



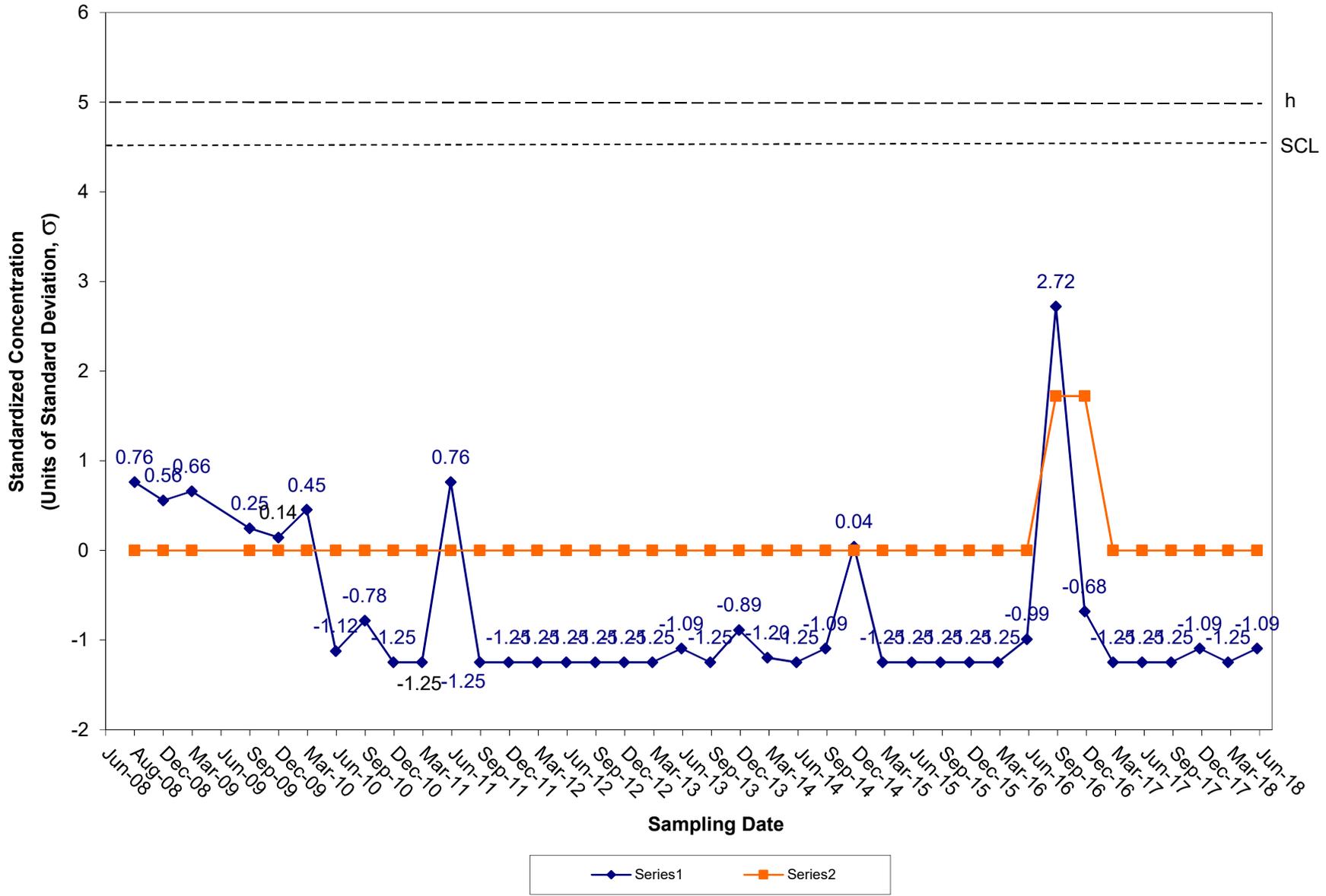
### CUSUM Control Chart for Silver Tiverton Landfill Groundwater Compliance Well OW-13



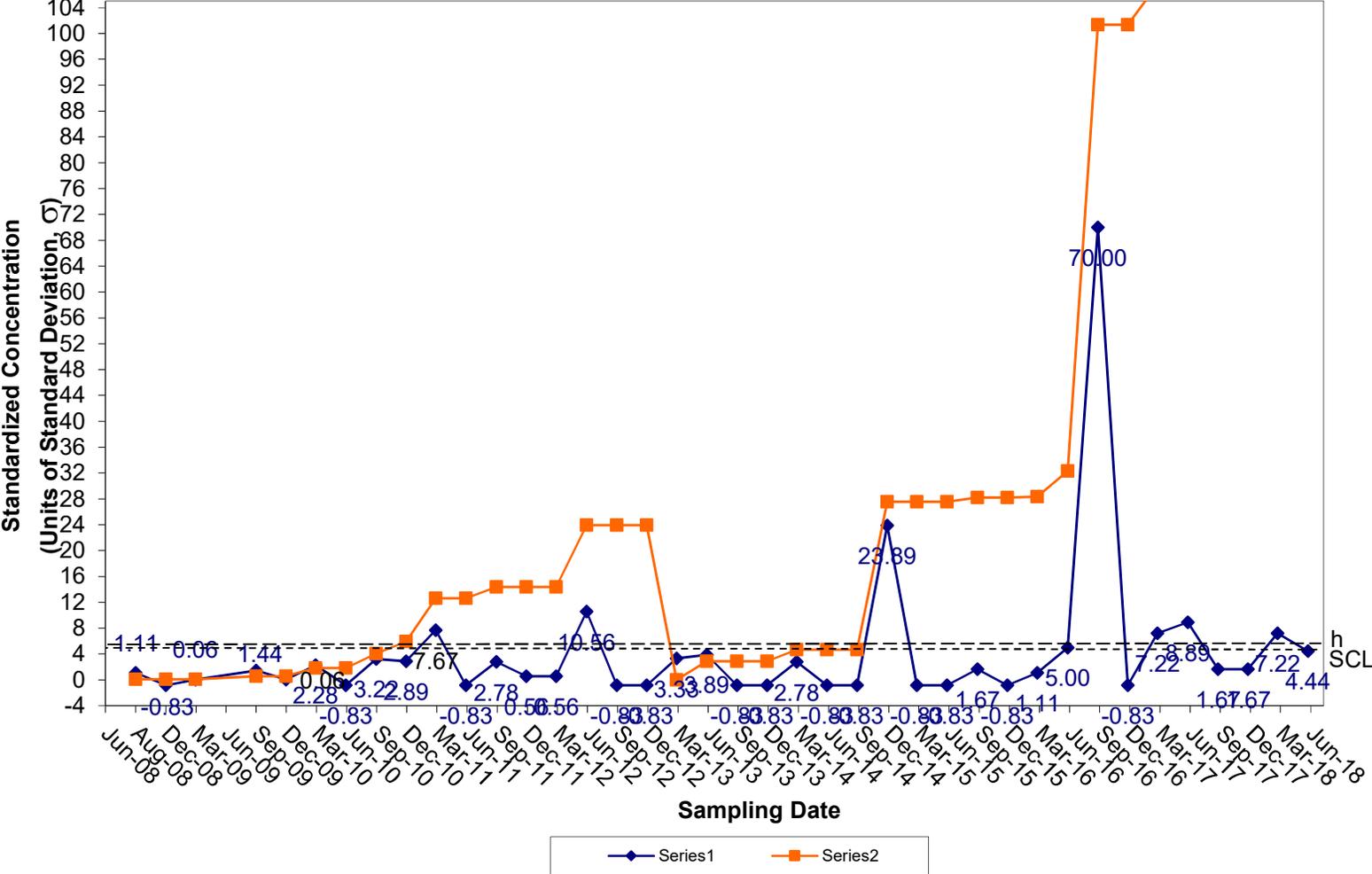
### CUSUM Control Chart for Thallium Tiverton Landfill Groundwater Compliance Well OW-13



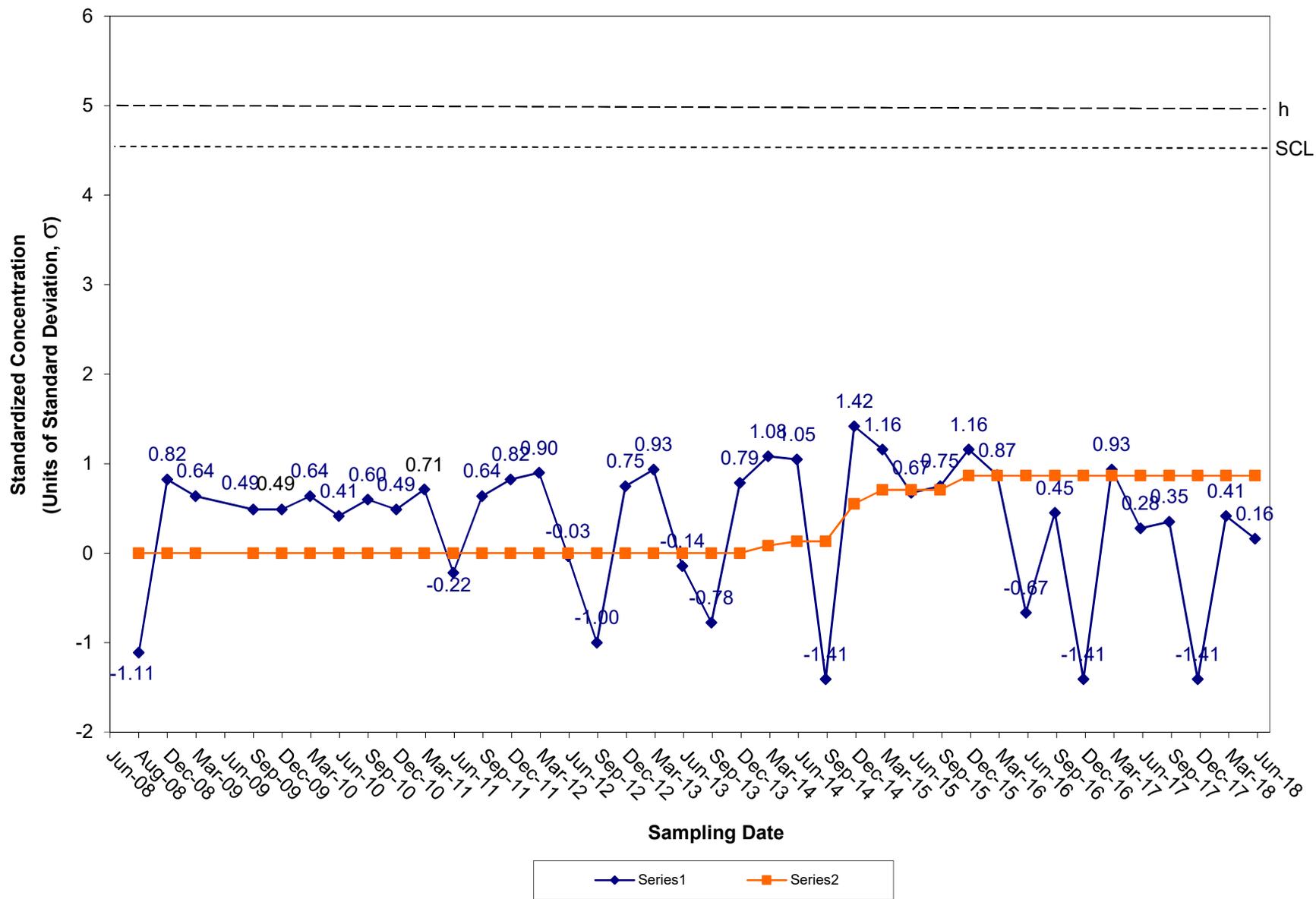
### CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-13



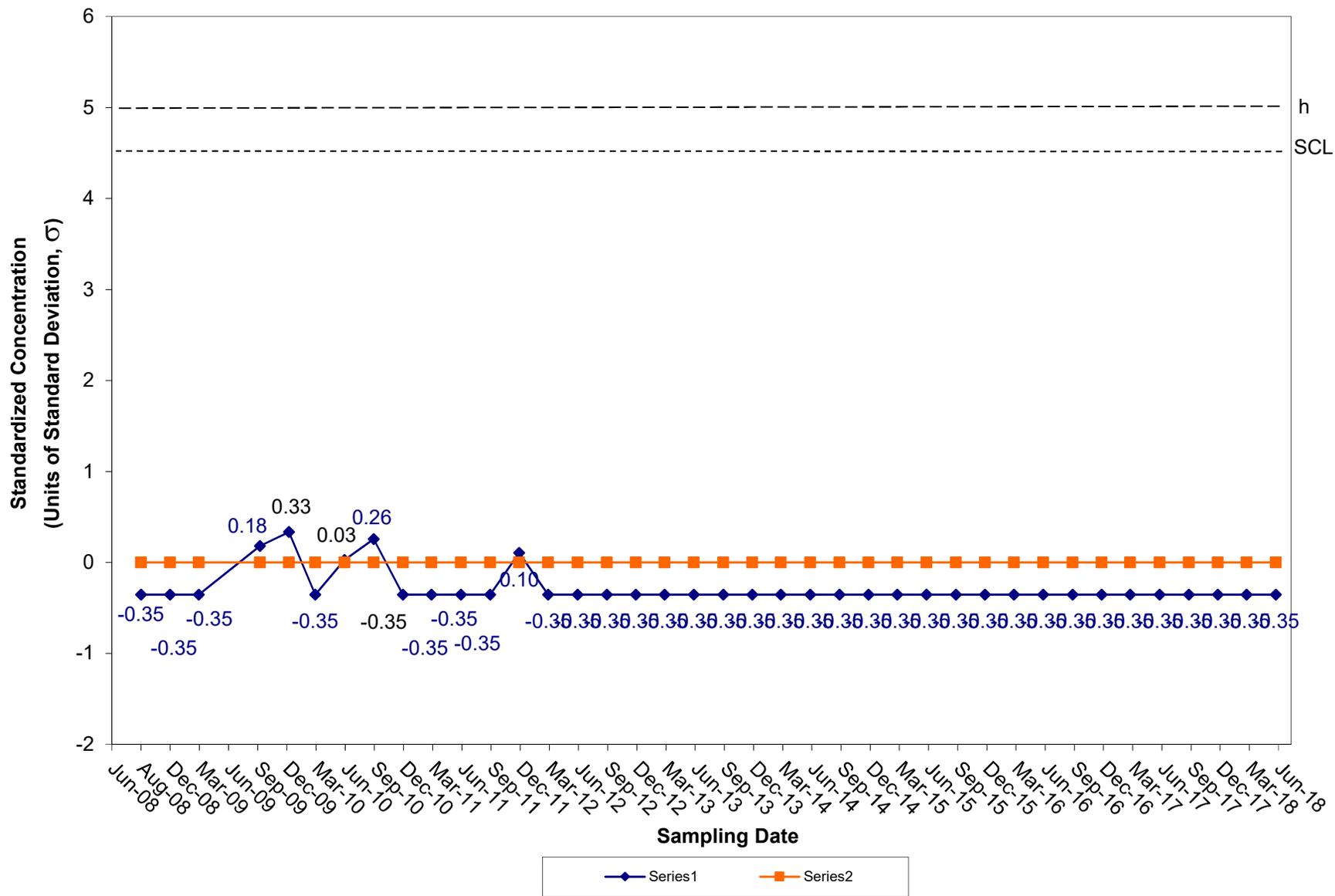
### CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-13



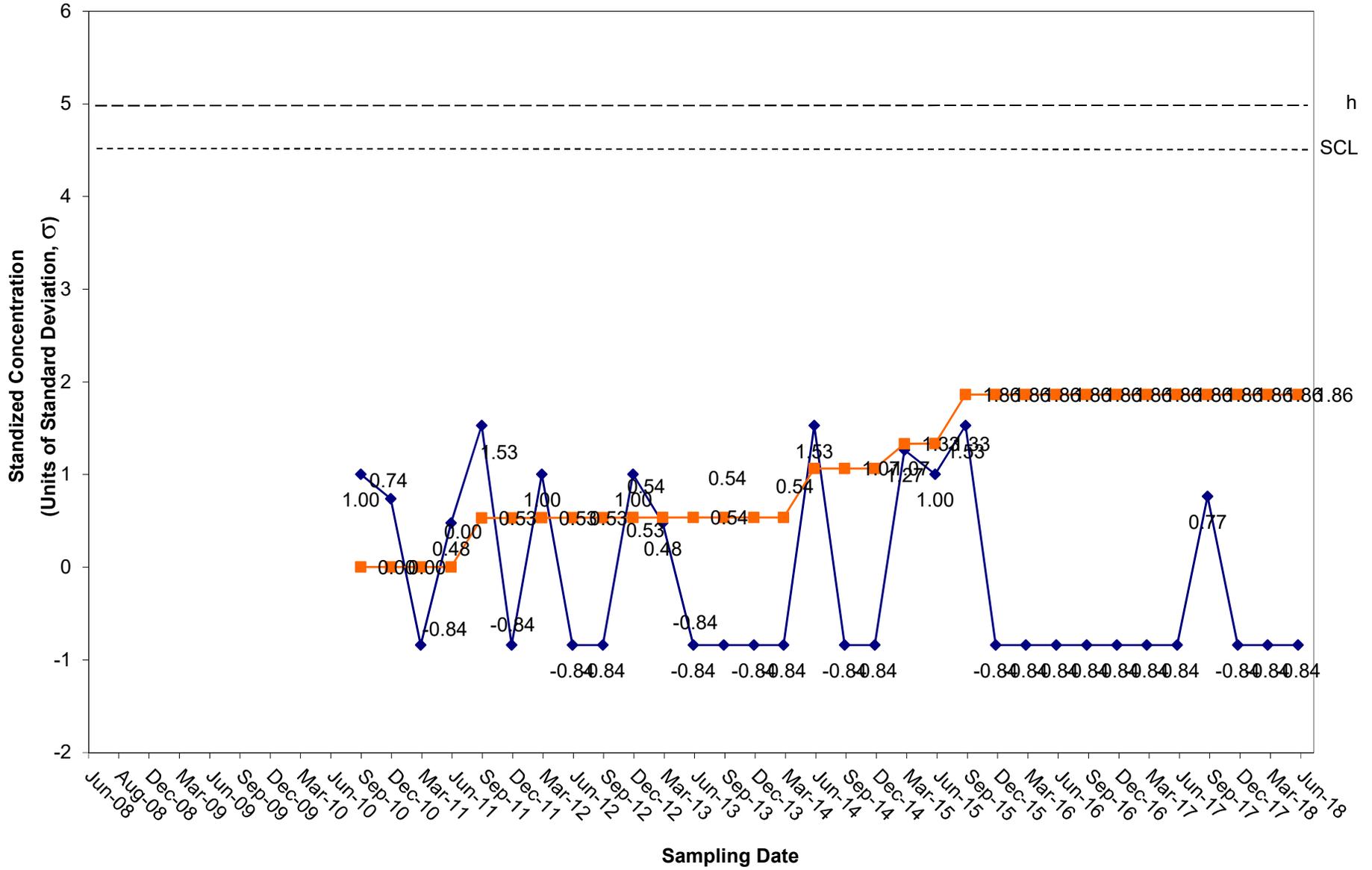
### CUSUM Control Chart for Chlorobenzene Tiverton Landfill Groundwater Compliance Well OW-13



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

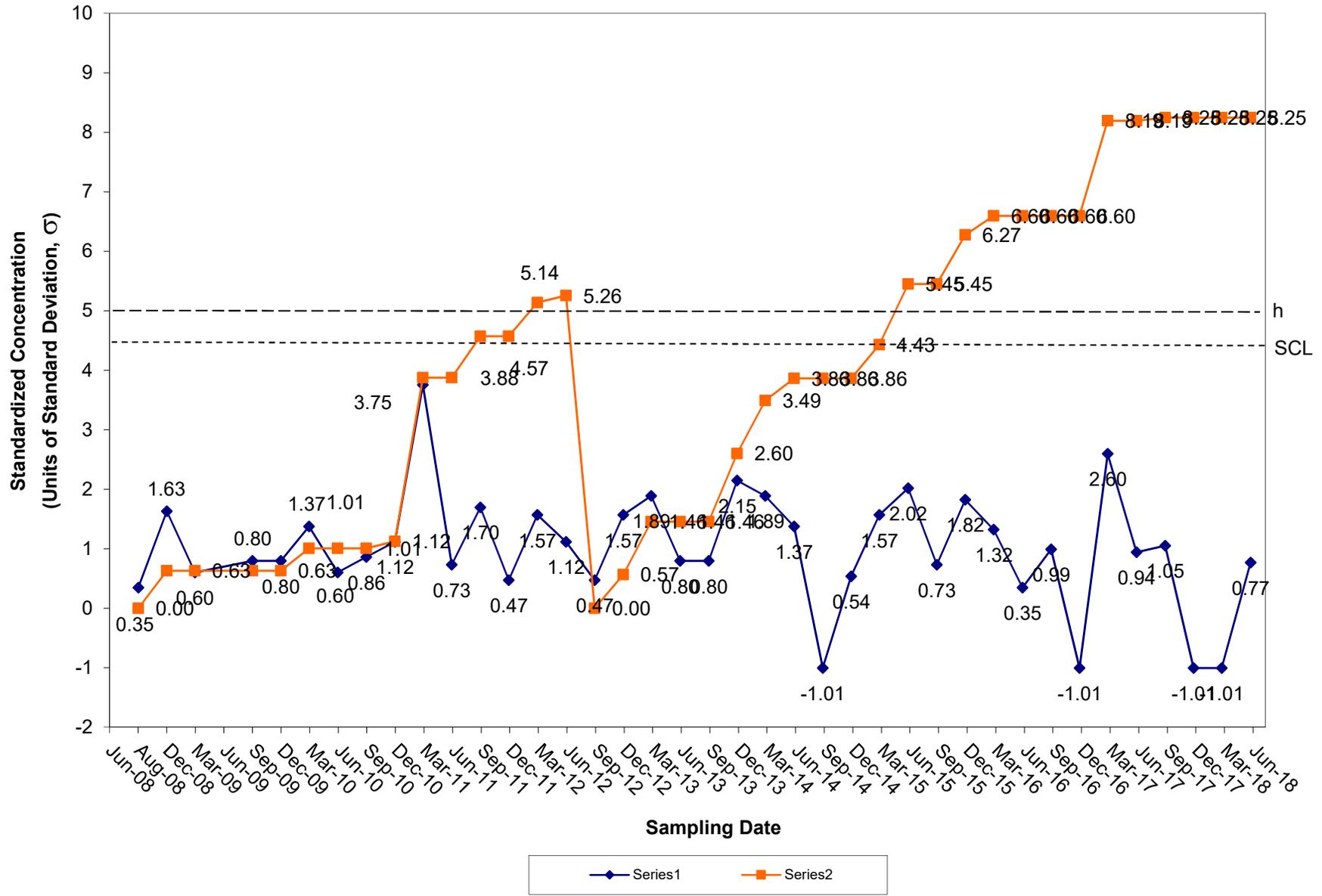


**CUSUM Control Chart for 1,4-Dichlorobenzene - Adjusted Baseline  
Tiverton Landfill Groundwater Compliance Well OW-13**

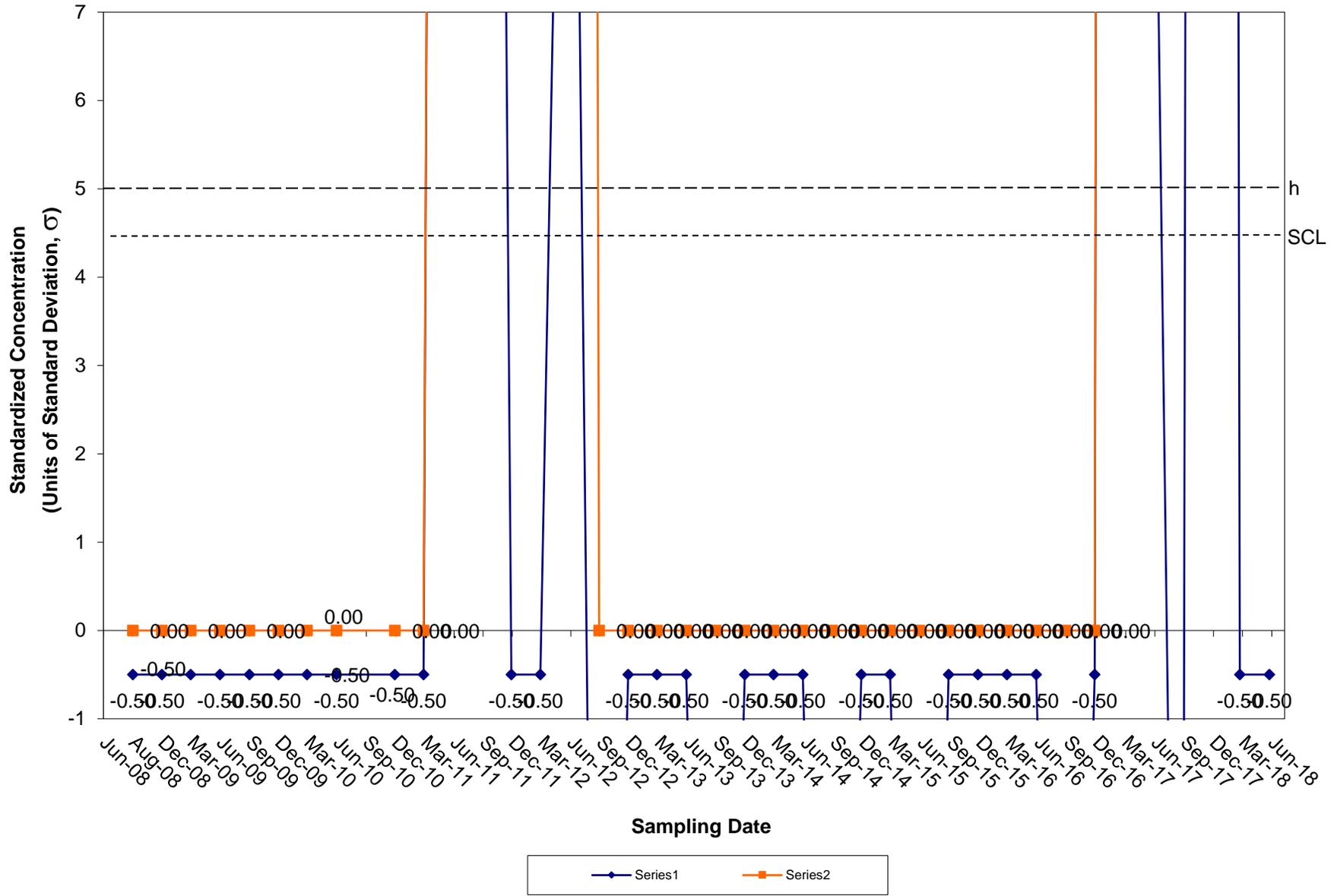


Legend: ◆ CUSUM (Blue line with diamond markers), ■ SCL (Orange line with square markers)

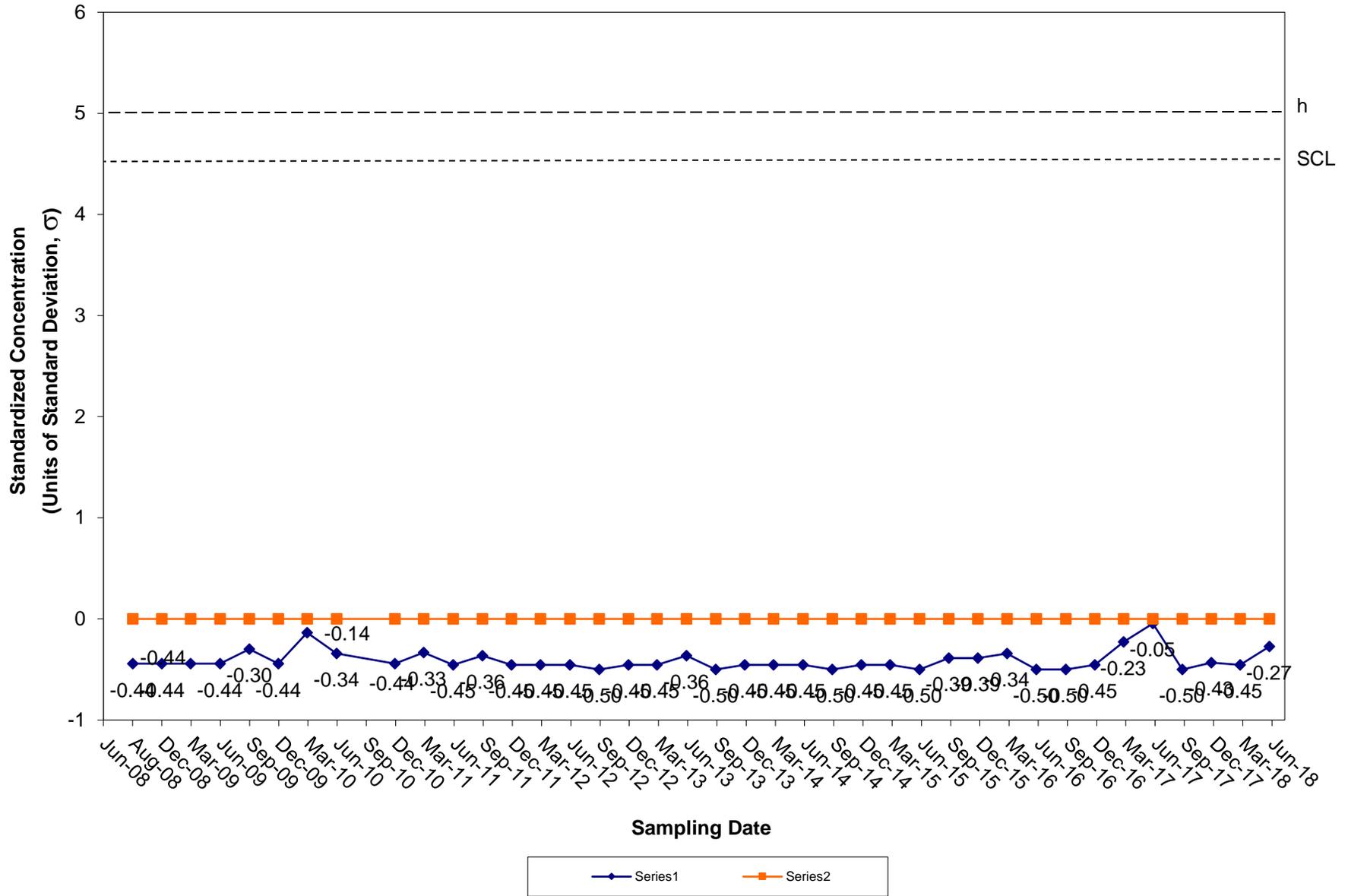
### CUSUM Control Chart for MTBE Tiverton Landfill Groundwater Compliance Well OW-13



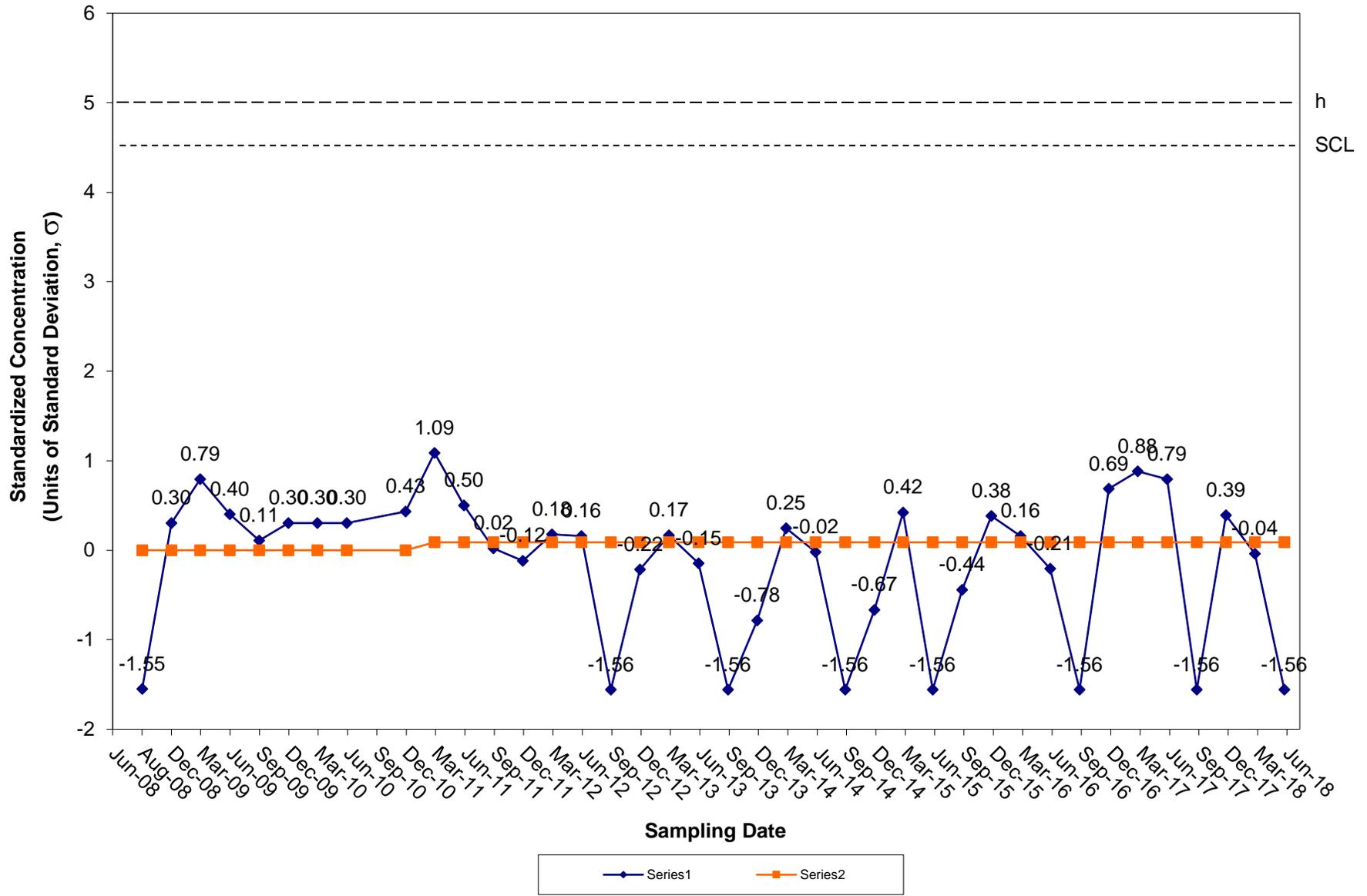
### CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-14



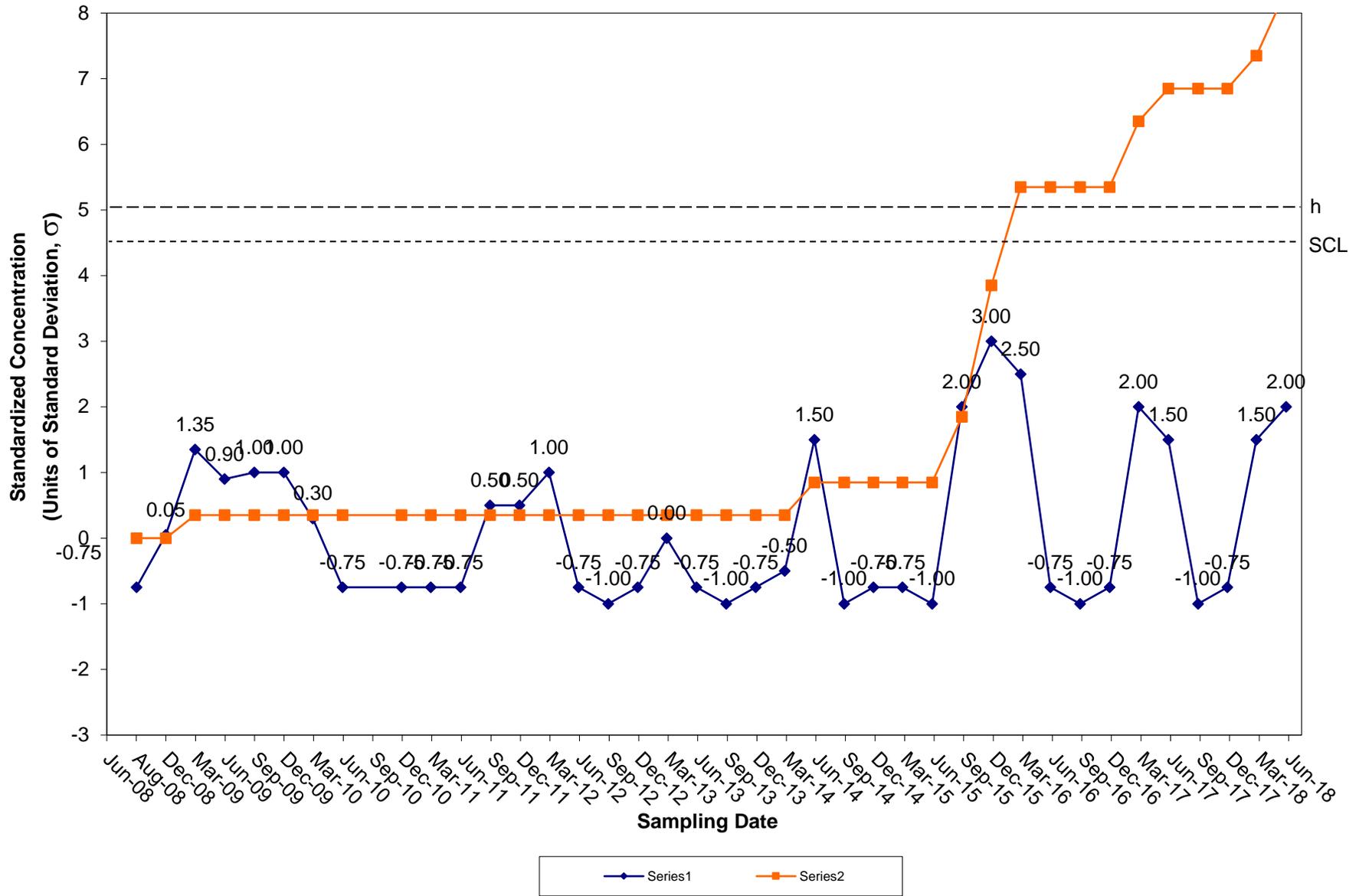
### CUSUM Control Chart for Arsenic Tiverton Landfill Groundwater Compliance Well OW-14



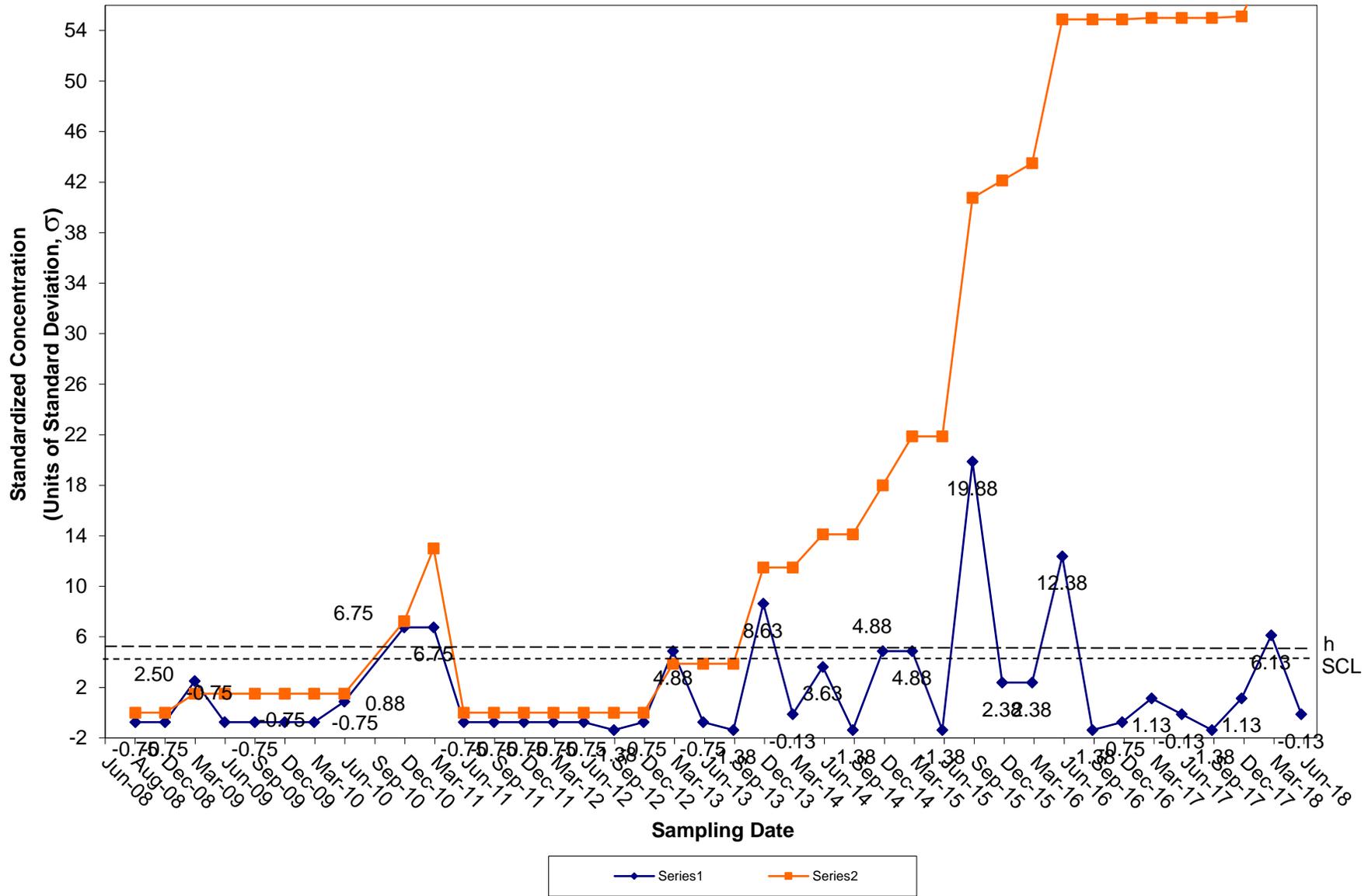
### CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-14



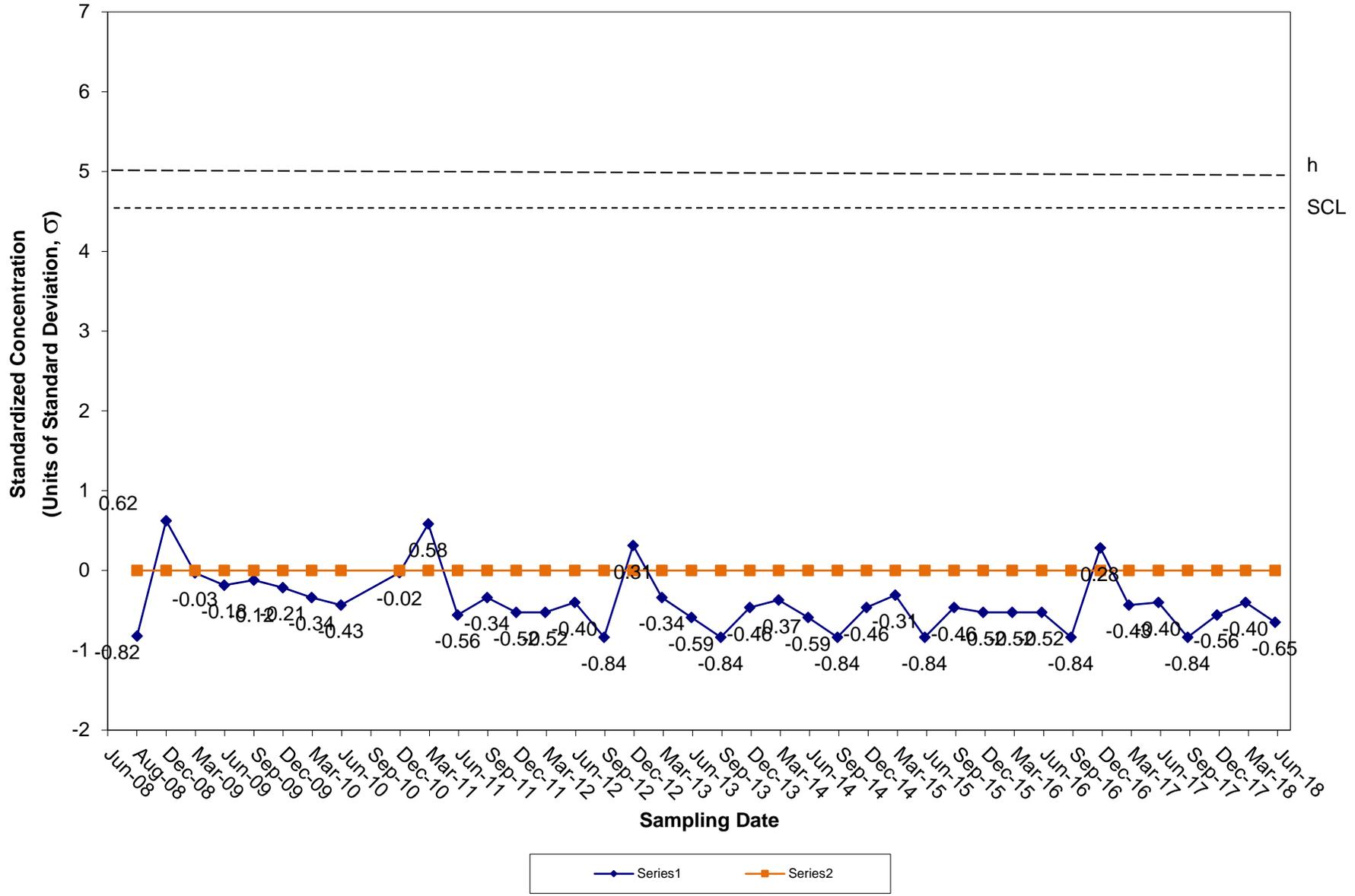
### CUSUM Control Chart for Cadmium Tiverton Landfill Groundwater Compliance Well OW-14



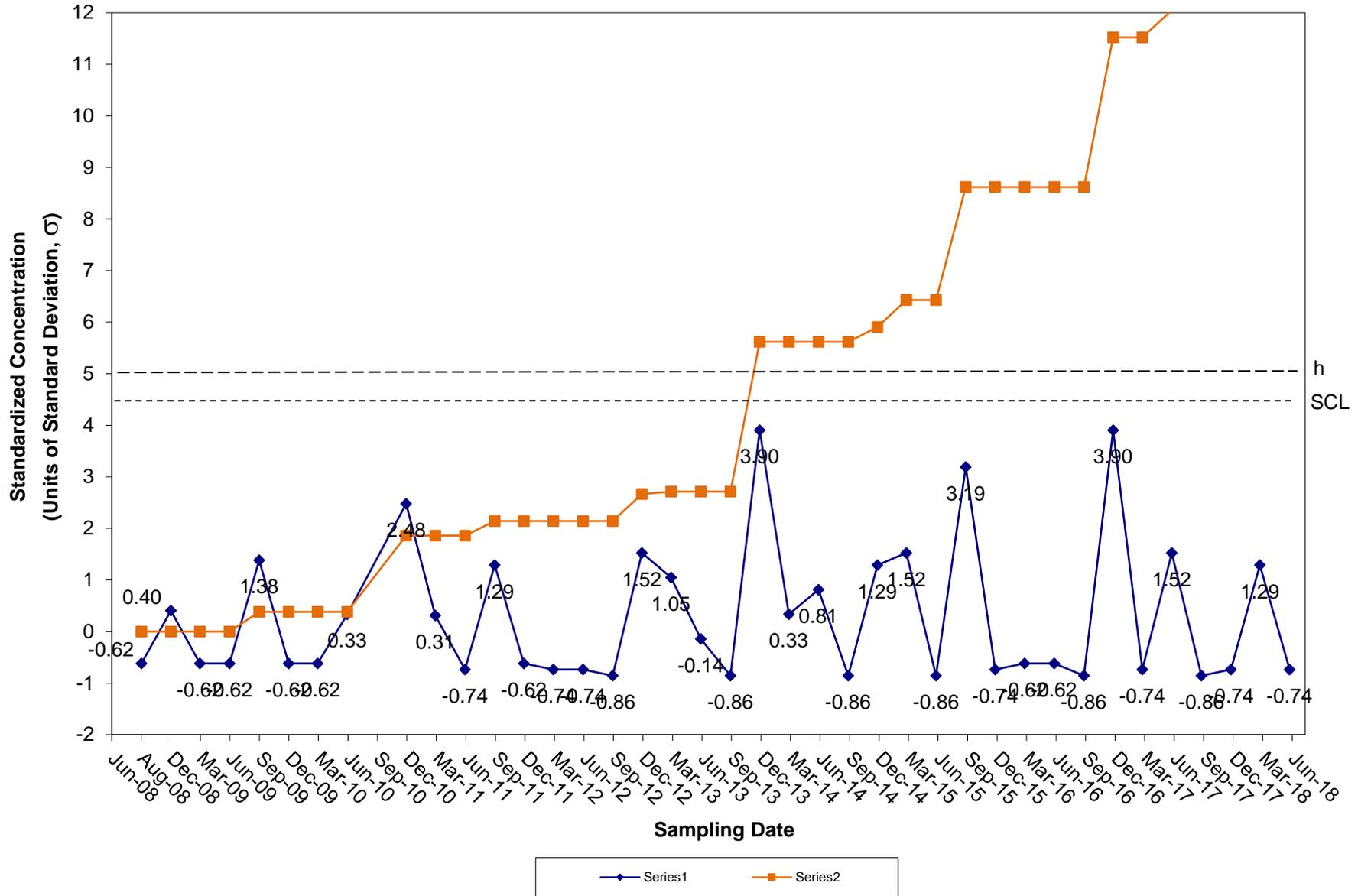
### CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Compliance Well OW-14



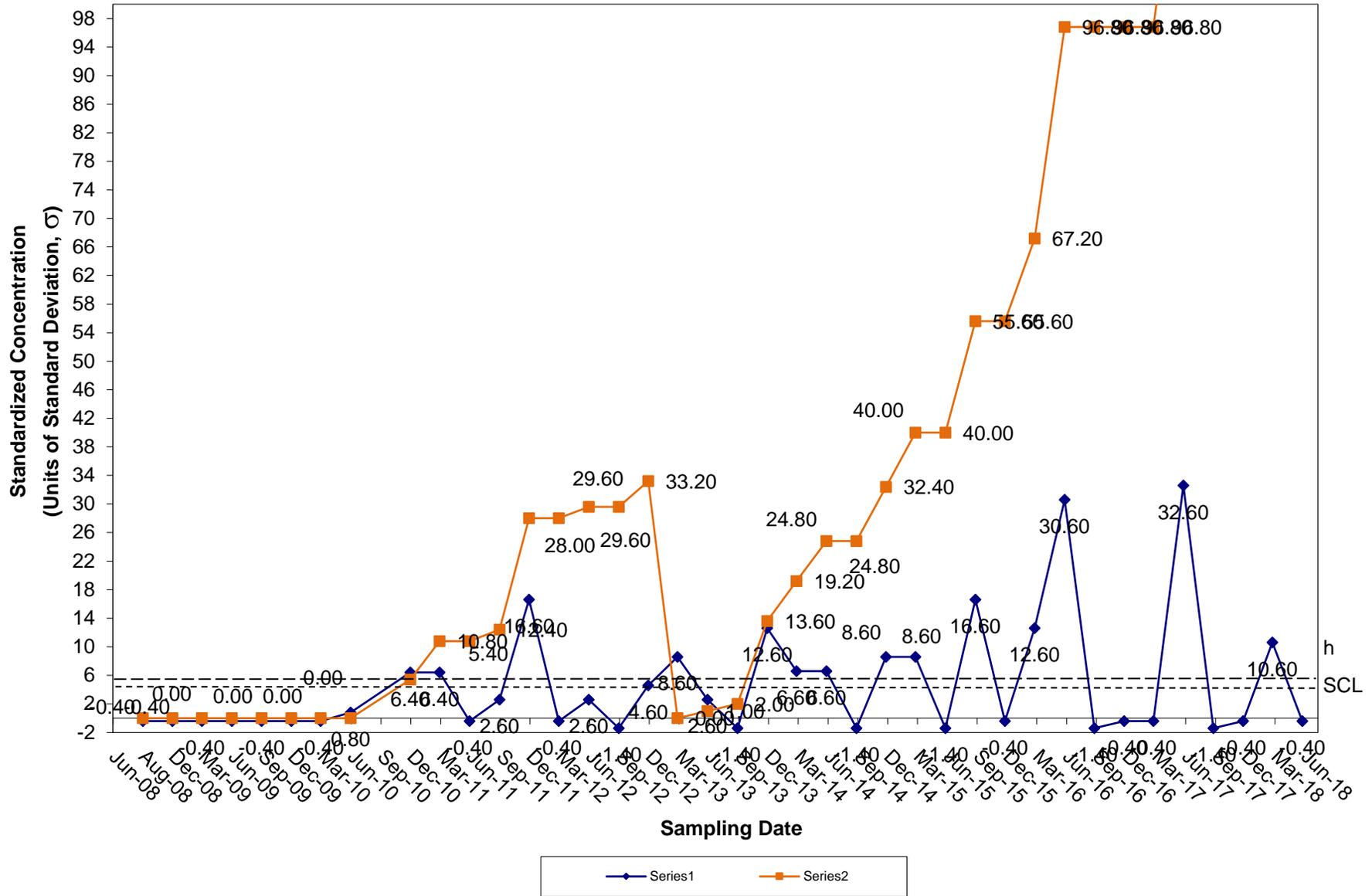
### CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Compliance Well OW-14



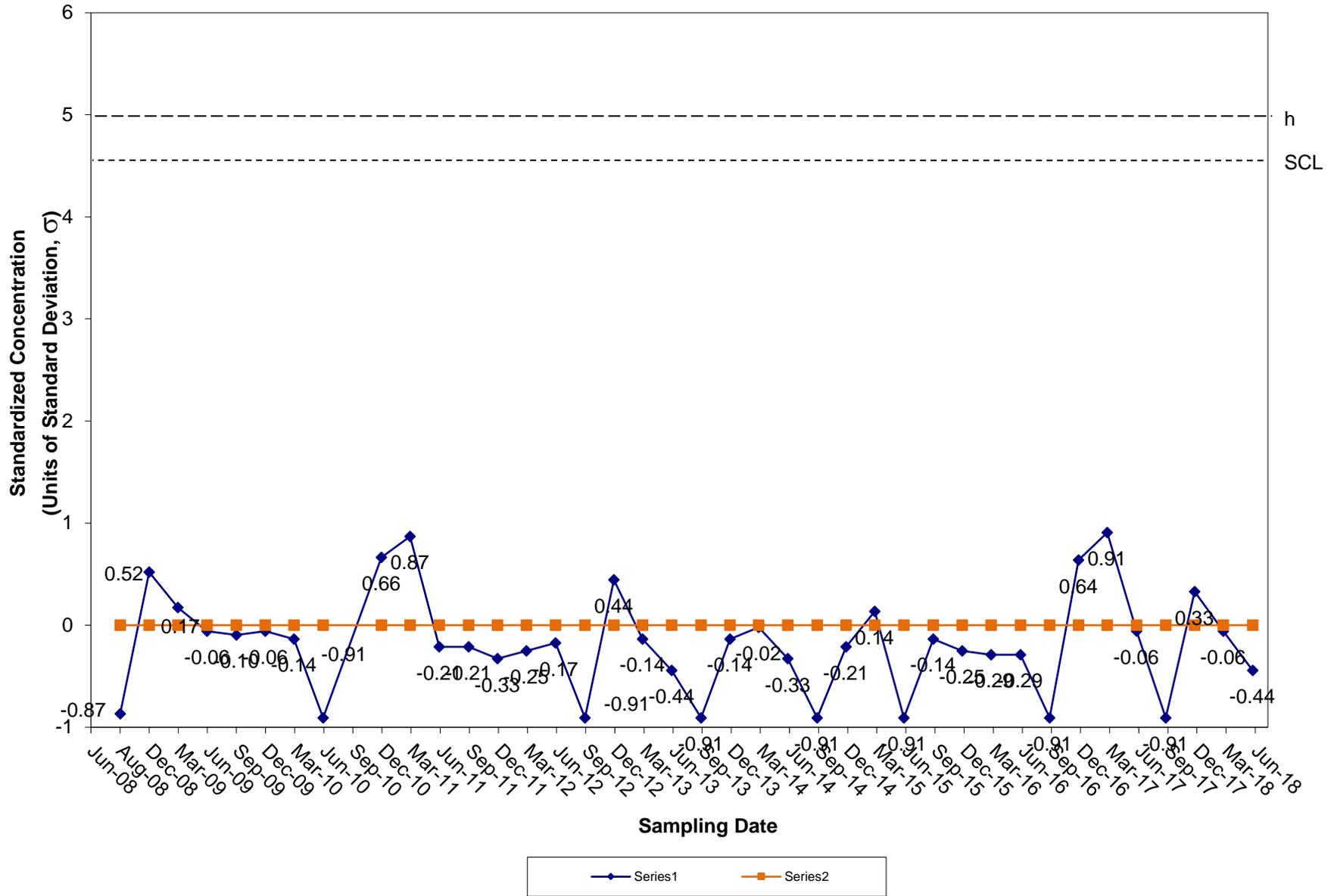
### CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-14



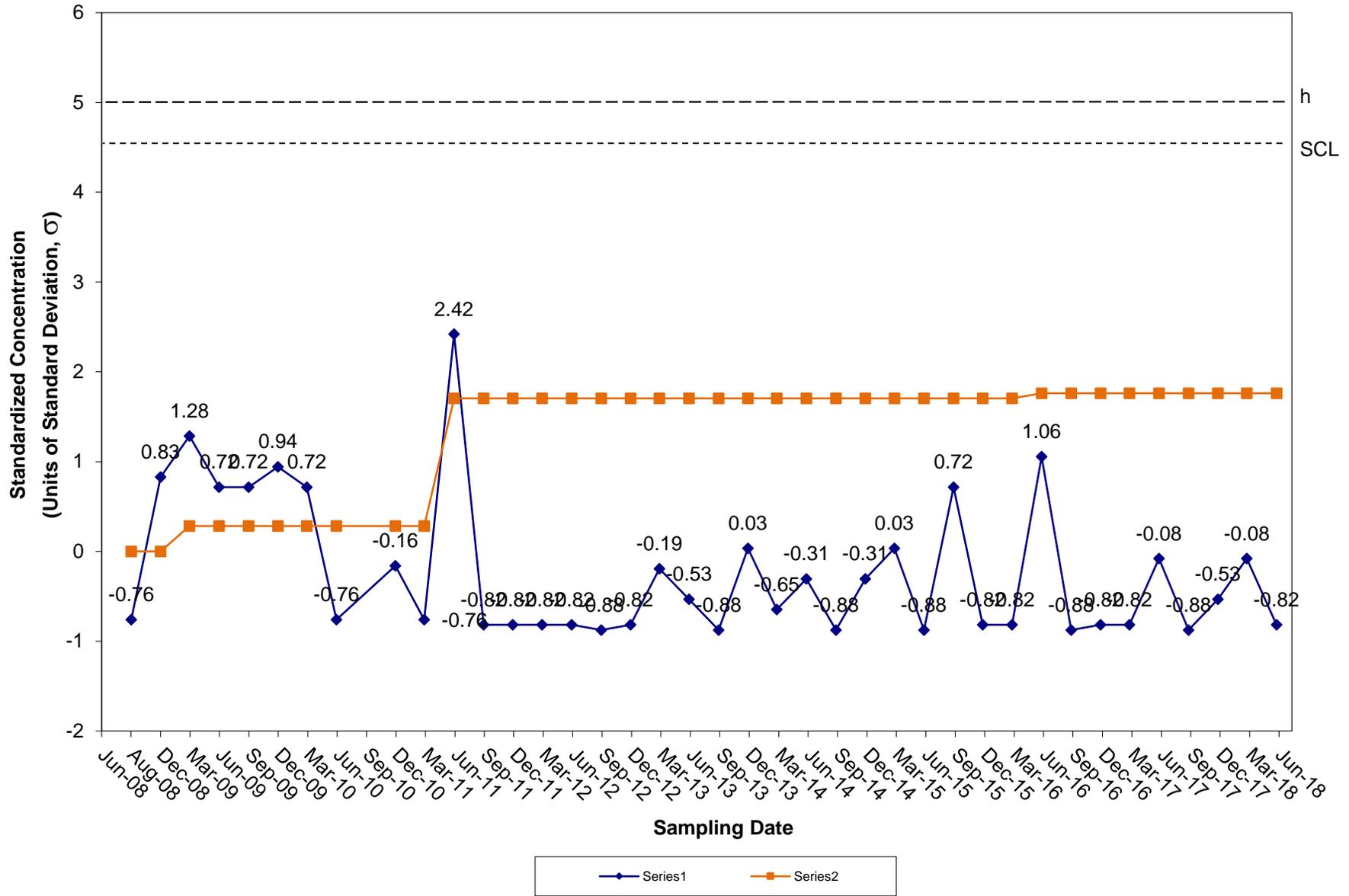
### CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-14



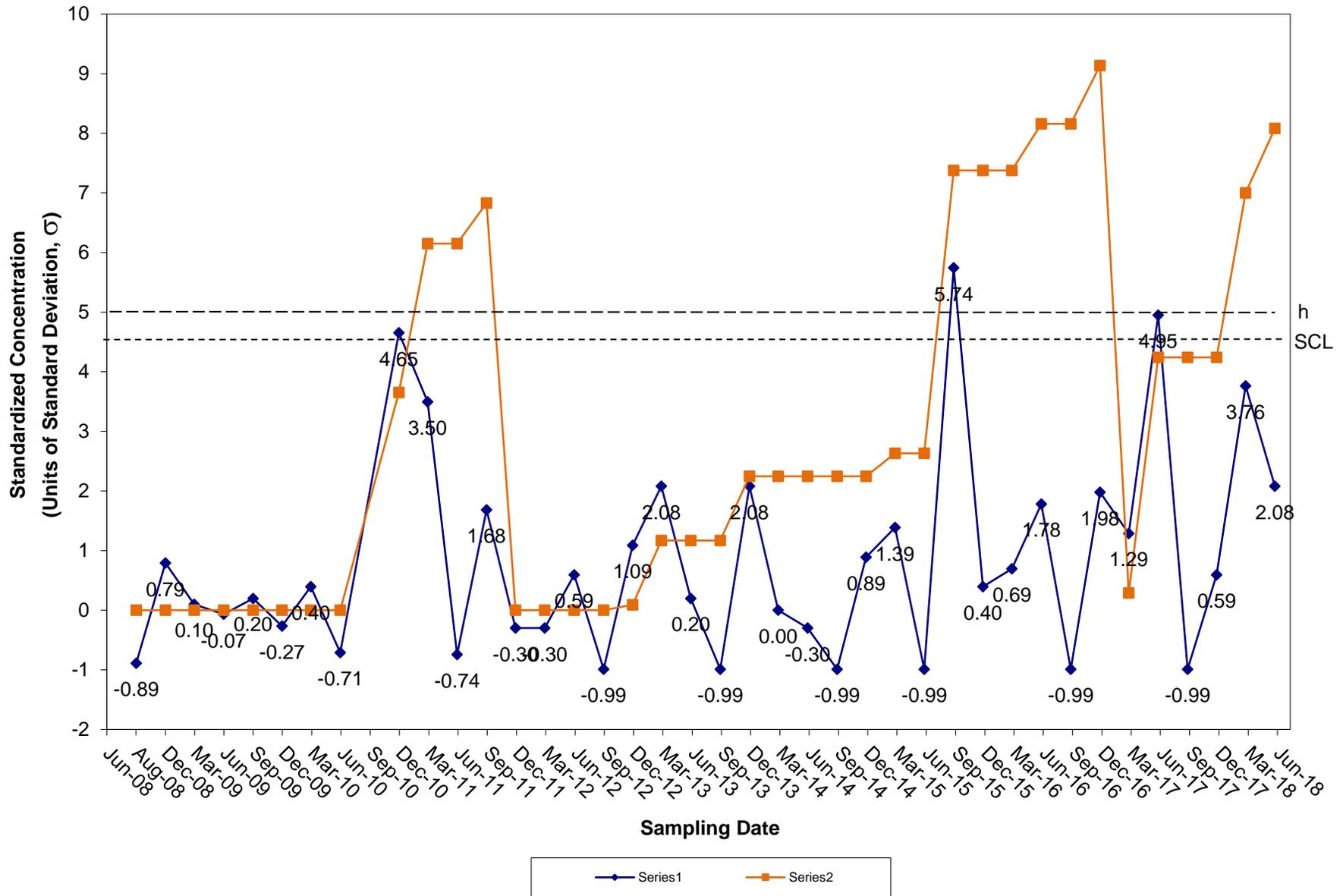
### CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-14



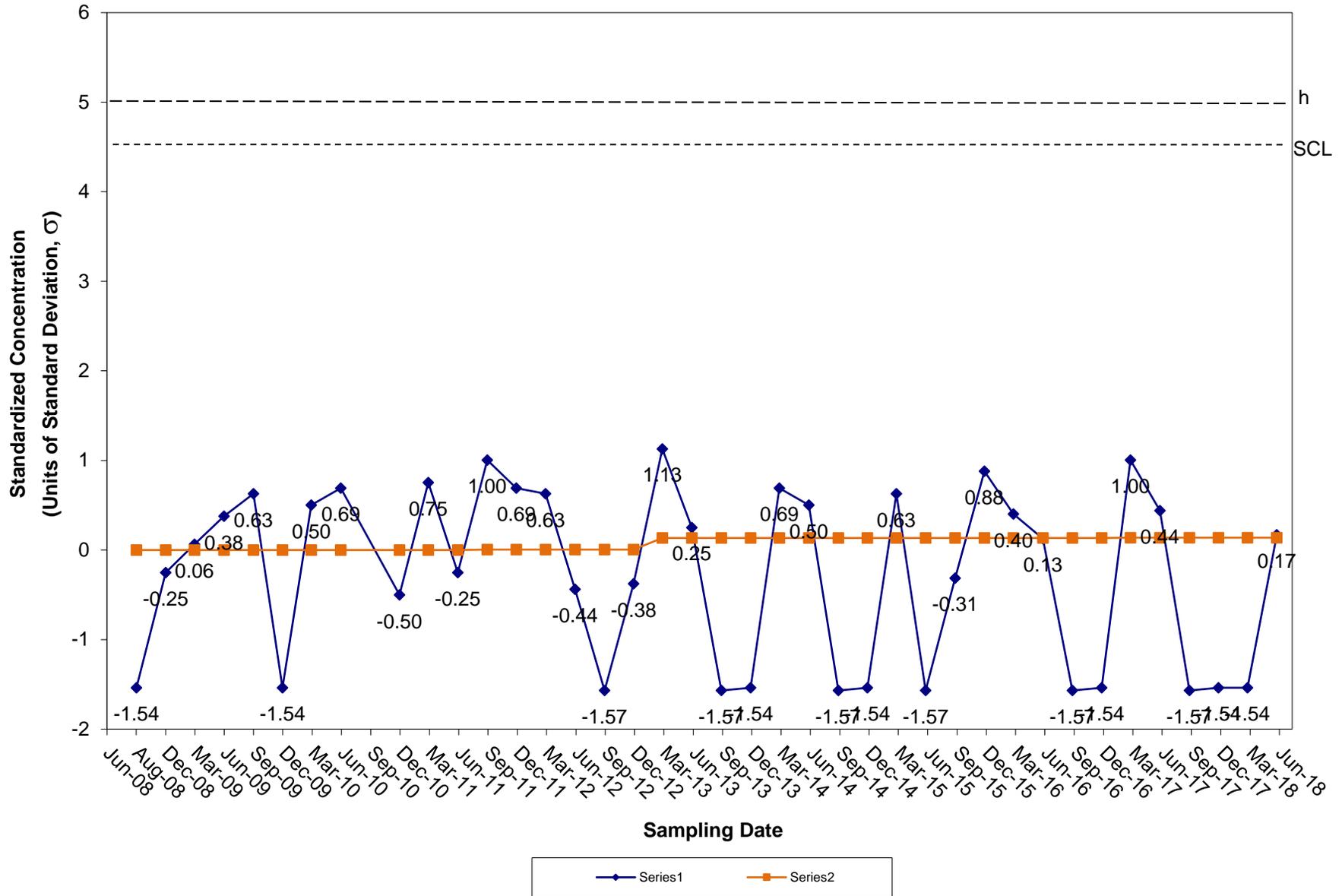
### CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-14



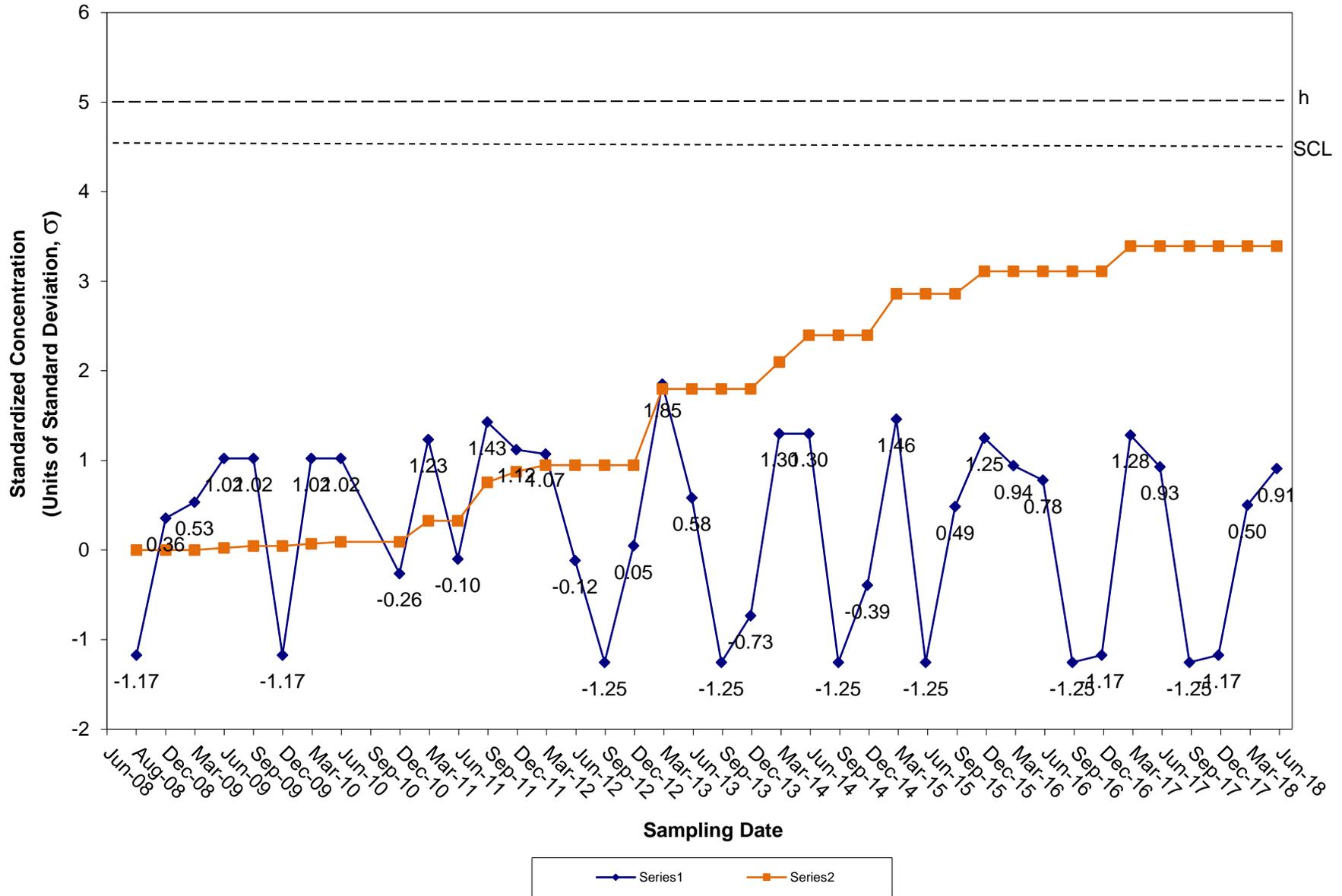
### CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-14



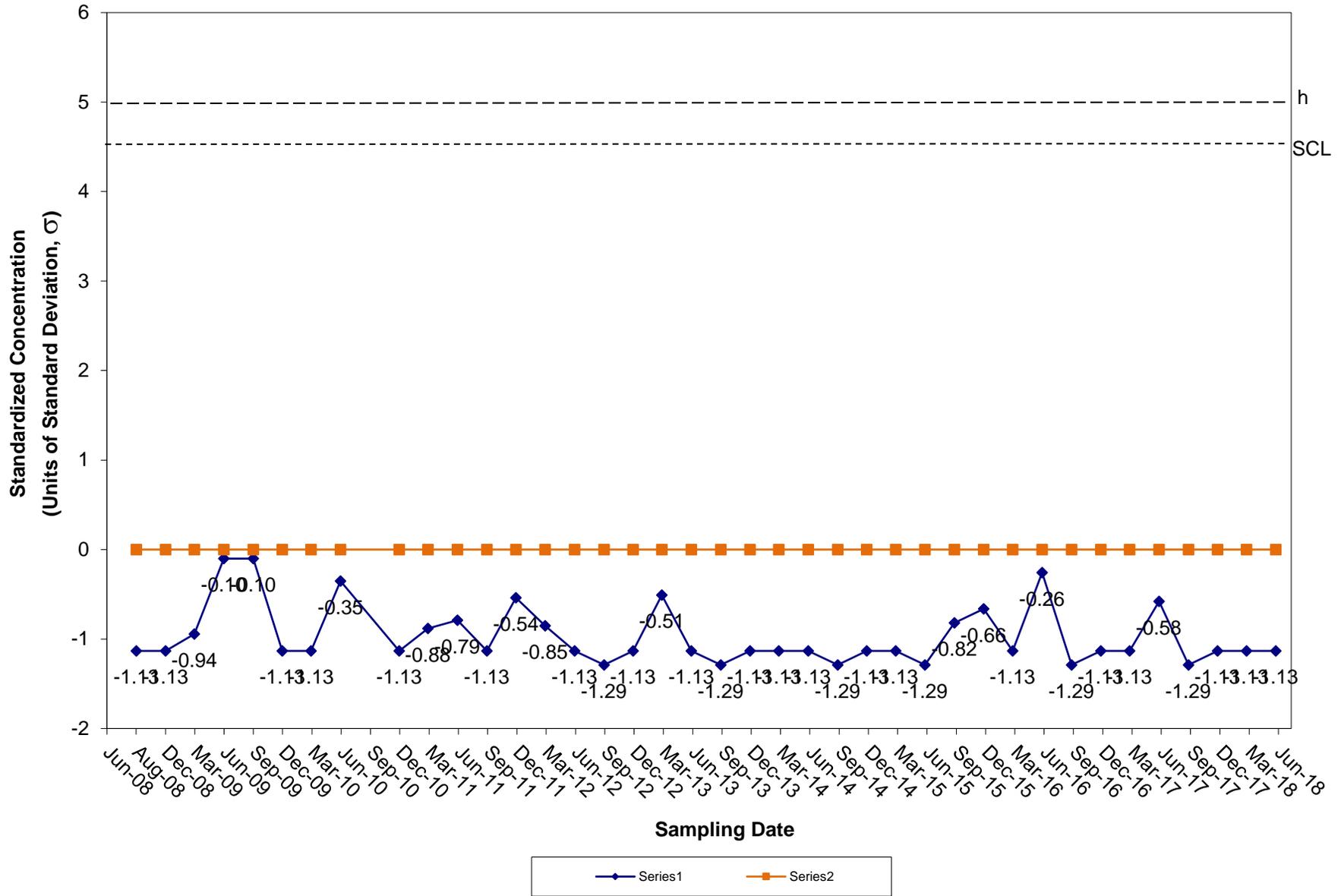
### CUSUM Control Chart for Benzene Tiverton Landfill Groundwater Compliance Well OW-14



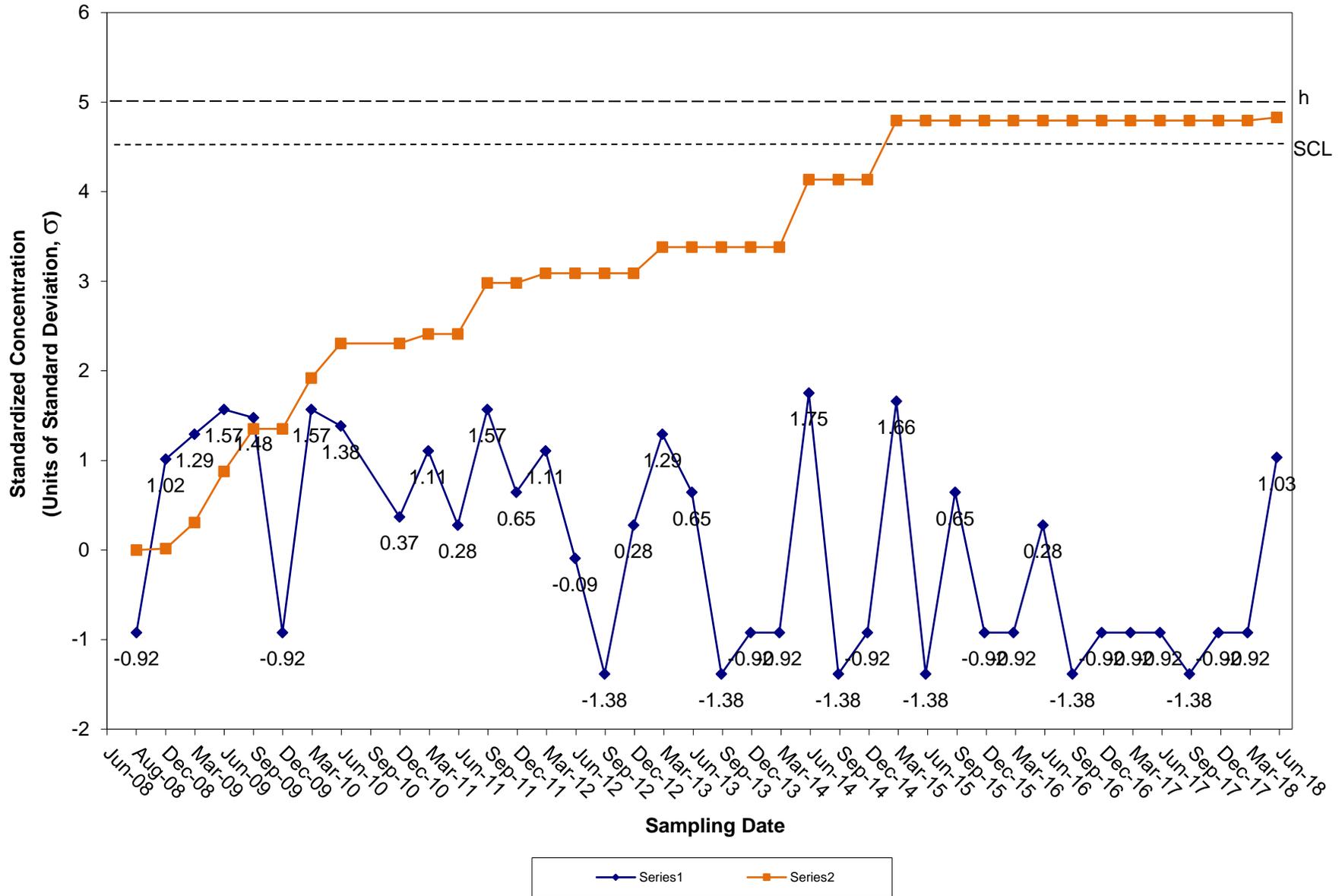
### CUSUM Control Chart for Chlorobenzene Tiverton Landfill Groundwater Compliance Well OW-14



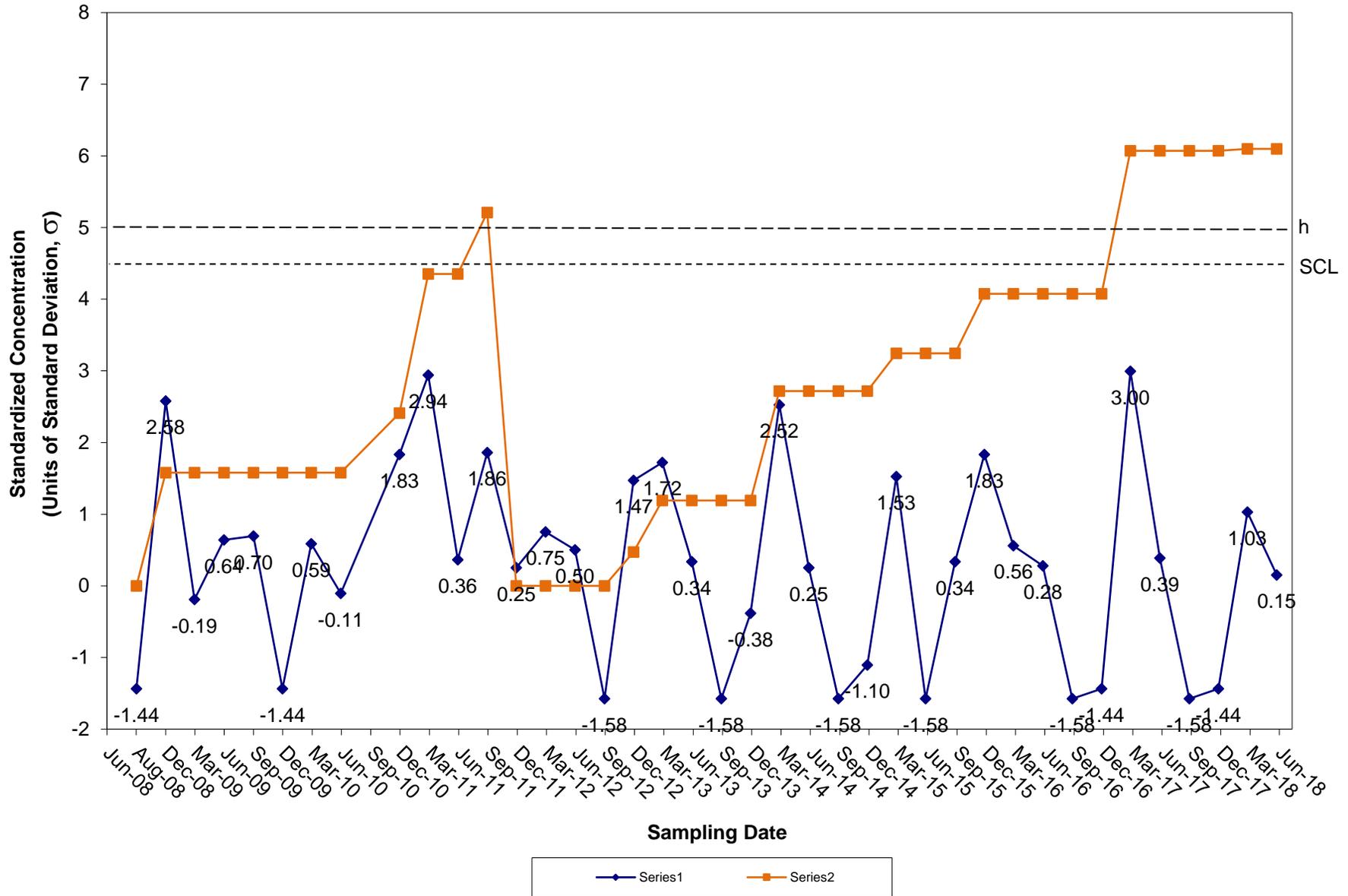
### CUSUM Control Chart for Chloroethane Tiverton Landfill Groundwater Compliance Well OW-14



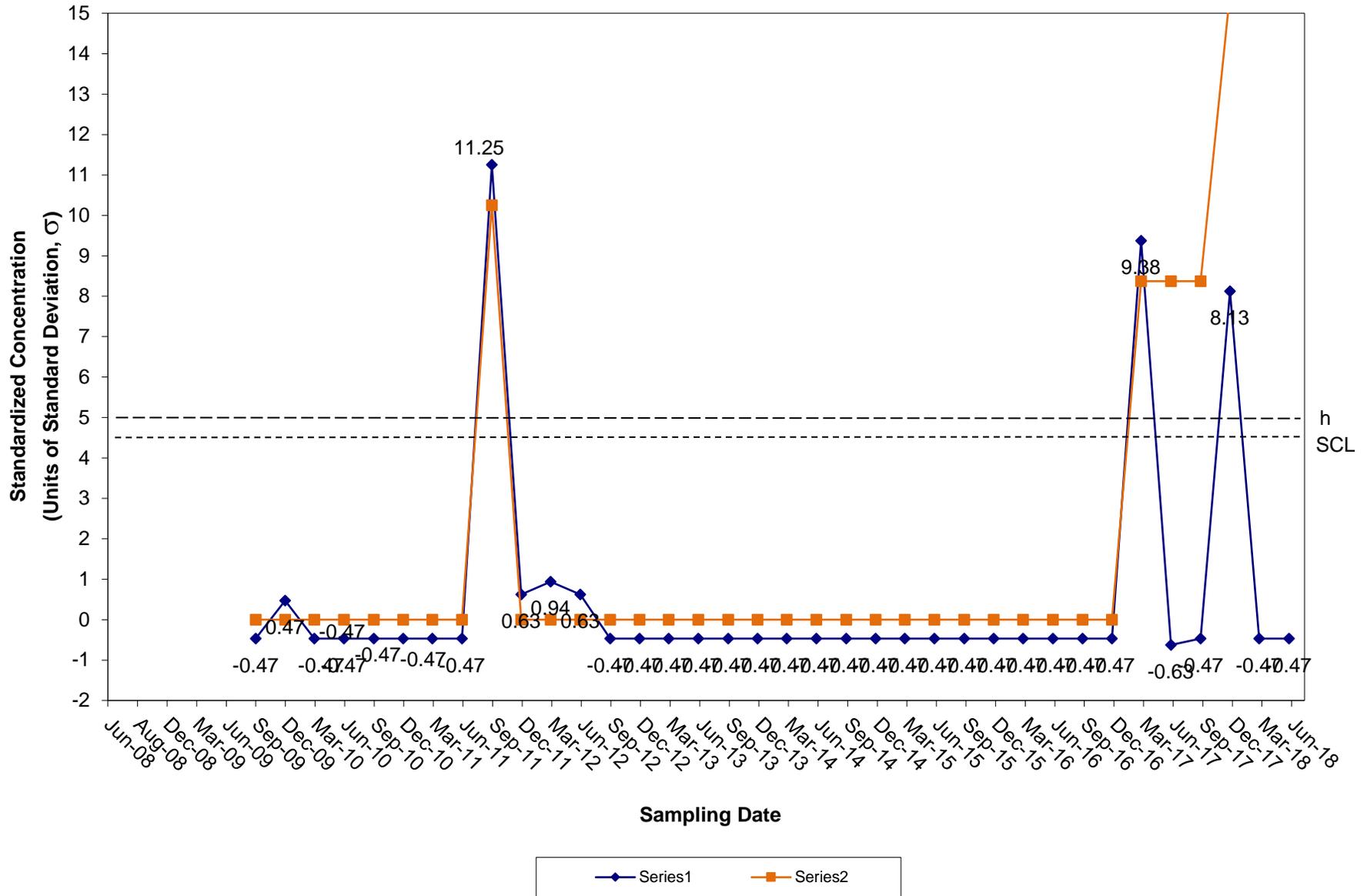
### CUSUM Control Chart for 1,4-Dichlorobenzene Tiverton Landfill Groundwater Compliance Well OW-14



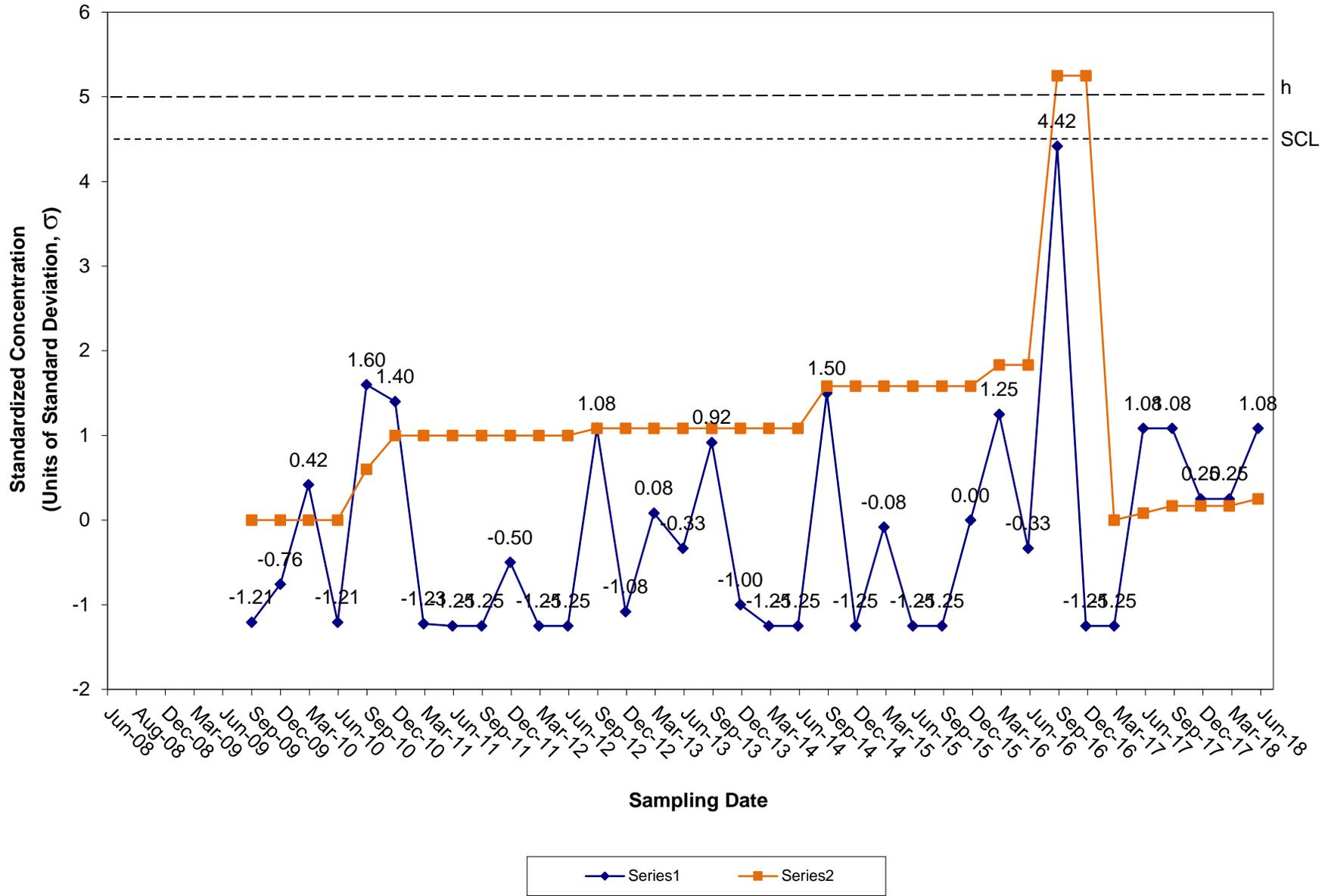
### CUSUM Control Chart for MTBE Tiverton Landfill Groundwater Compliance Well OW-14



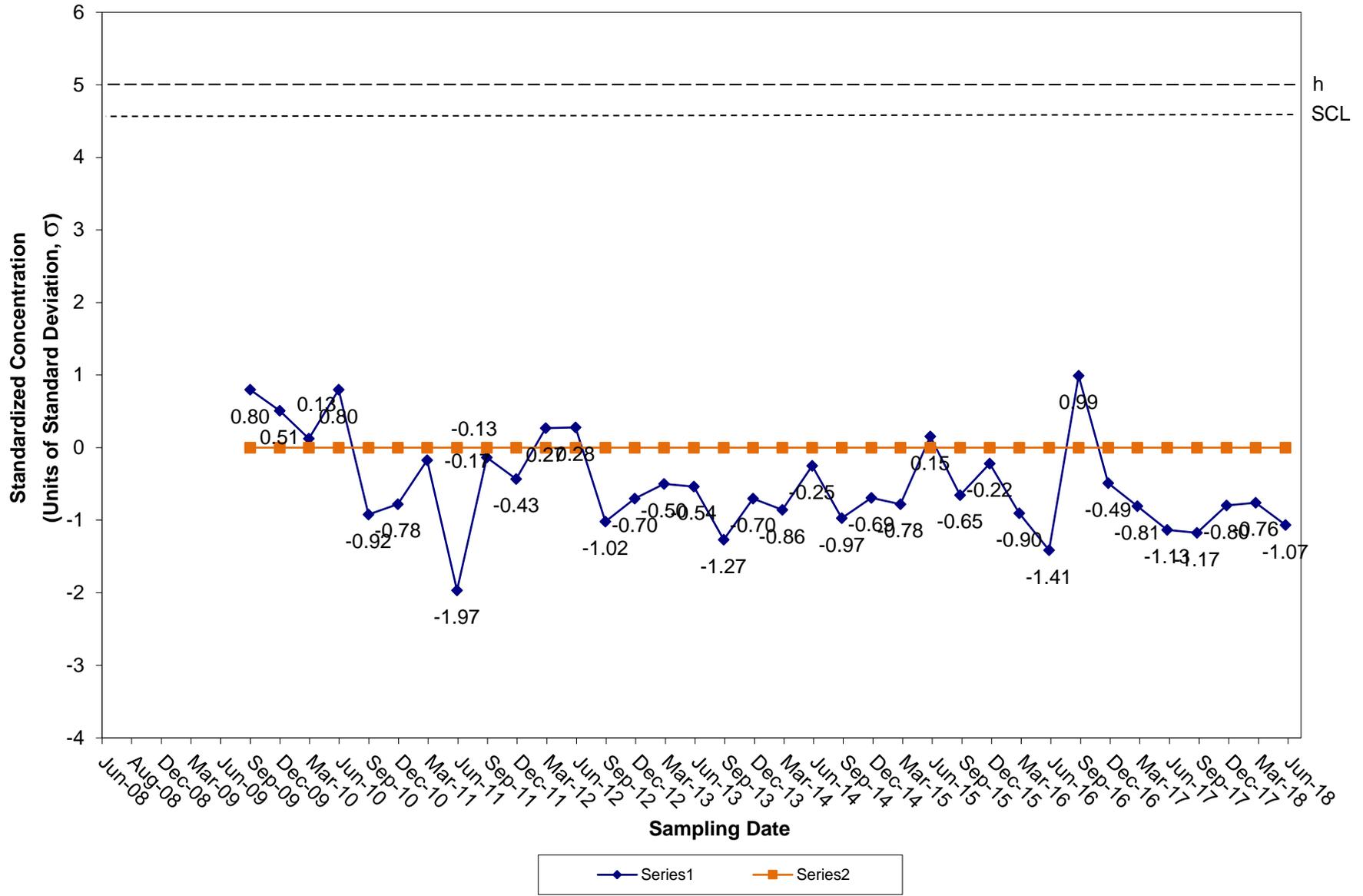
### CUSUM Control Chart for Antimony Tiverton Landfill Groundwater Compliance Well OW-15



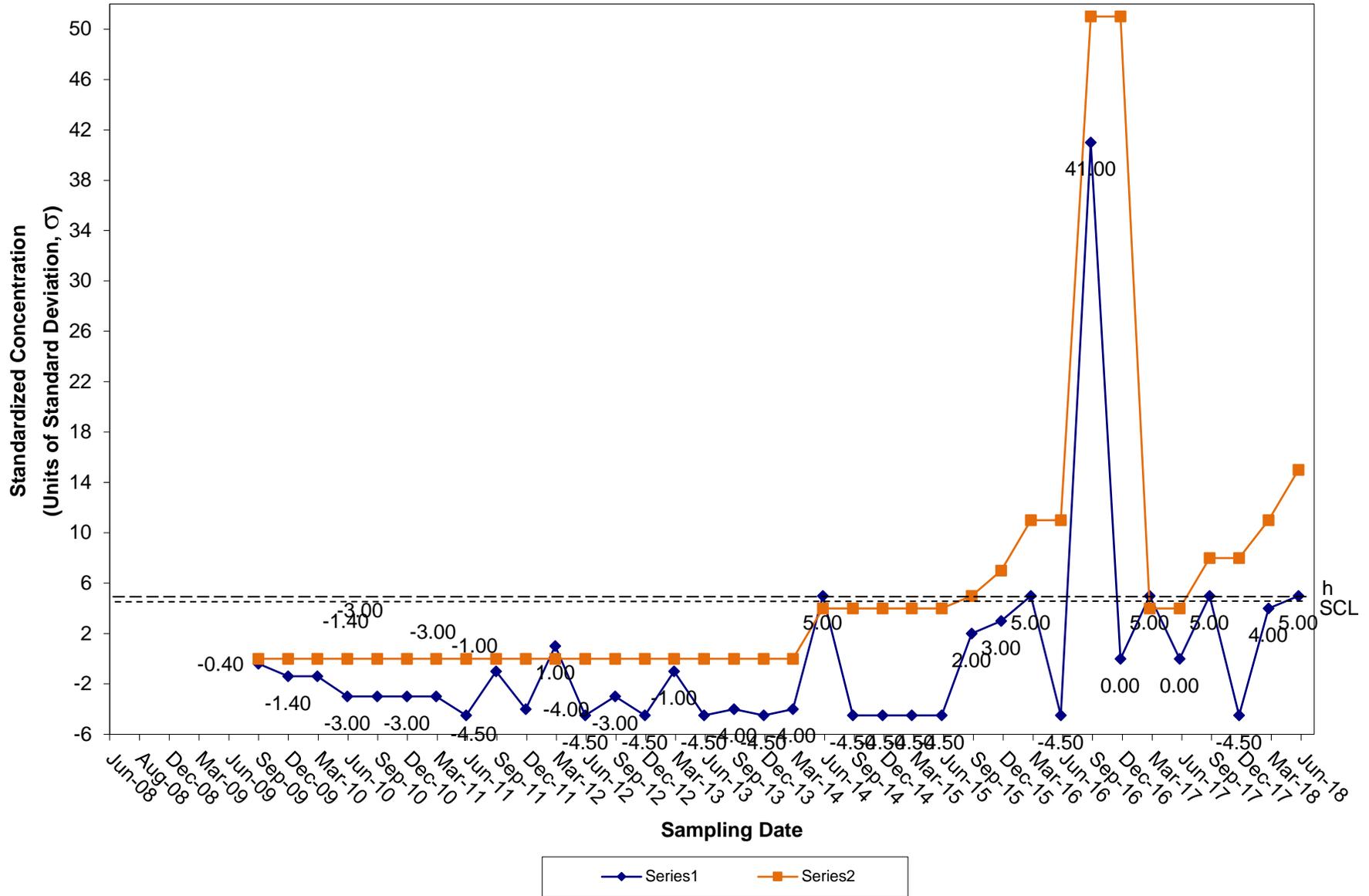
### CUSUM Control Chart for Arsenic Tiverton Landfill Groundwater Compliance Well OW-15



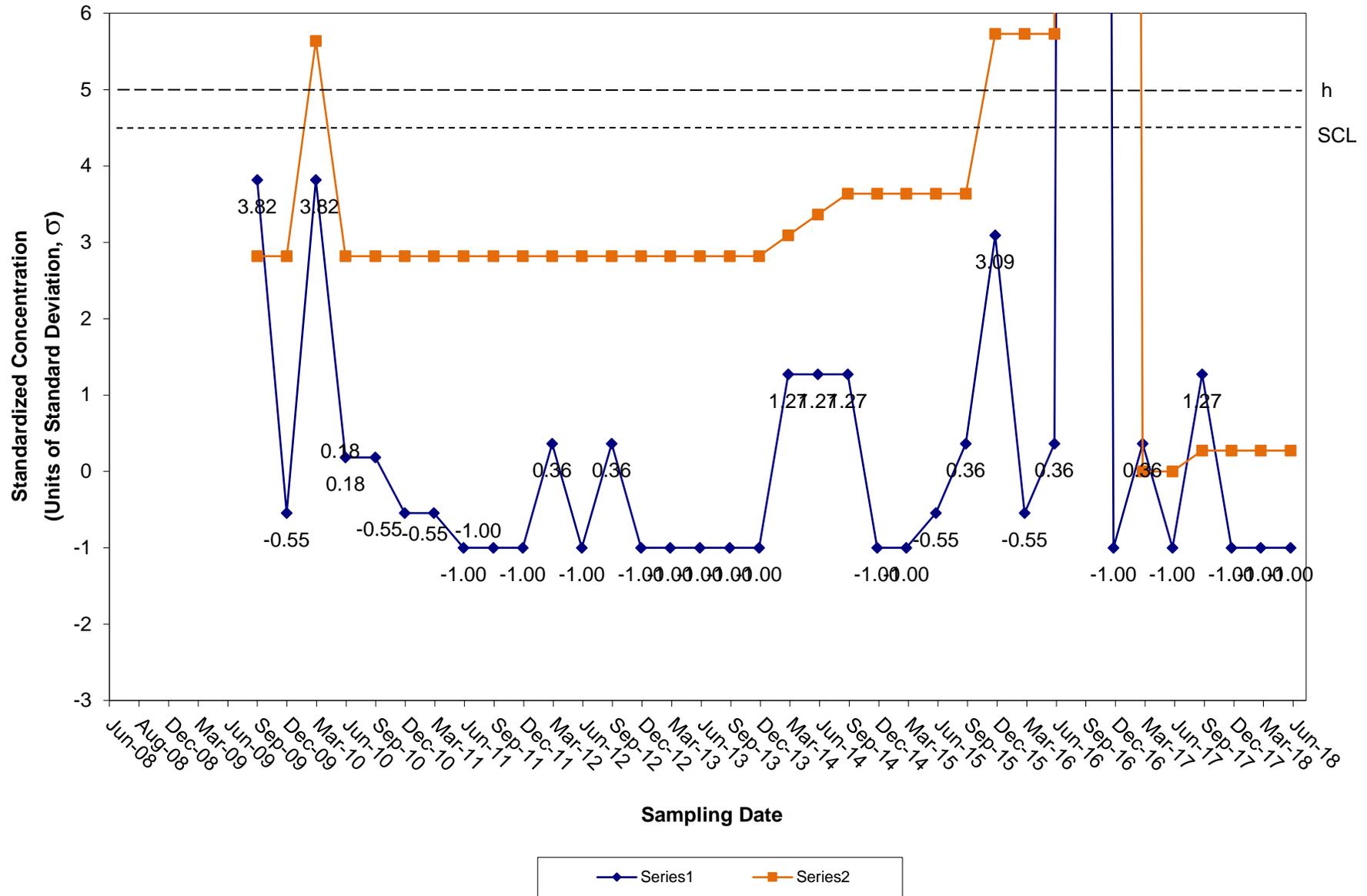
### CUSUM Control Chart for Barium Tiverton Landfill Groundwater Compliance Well OW-15



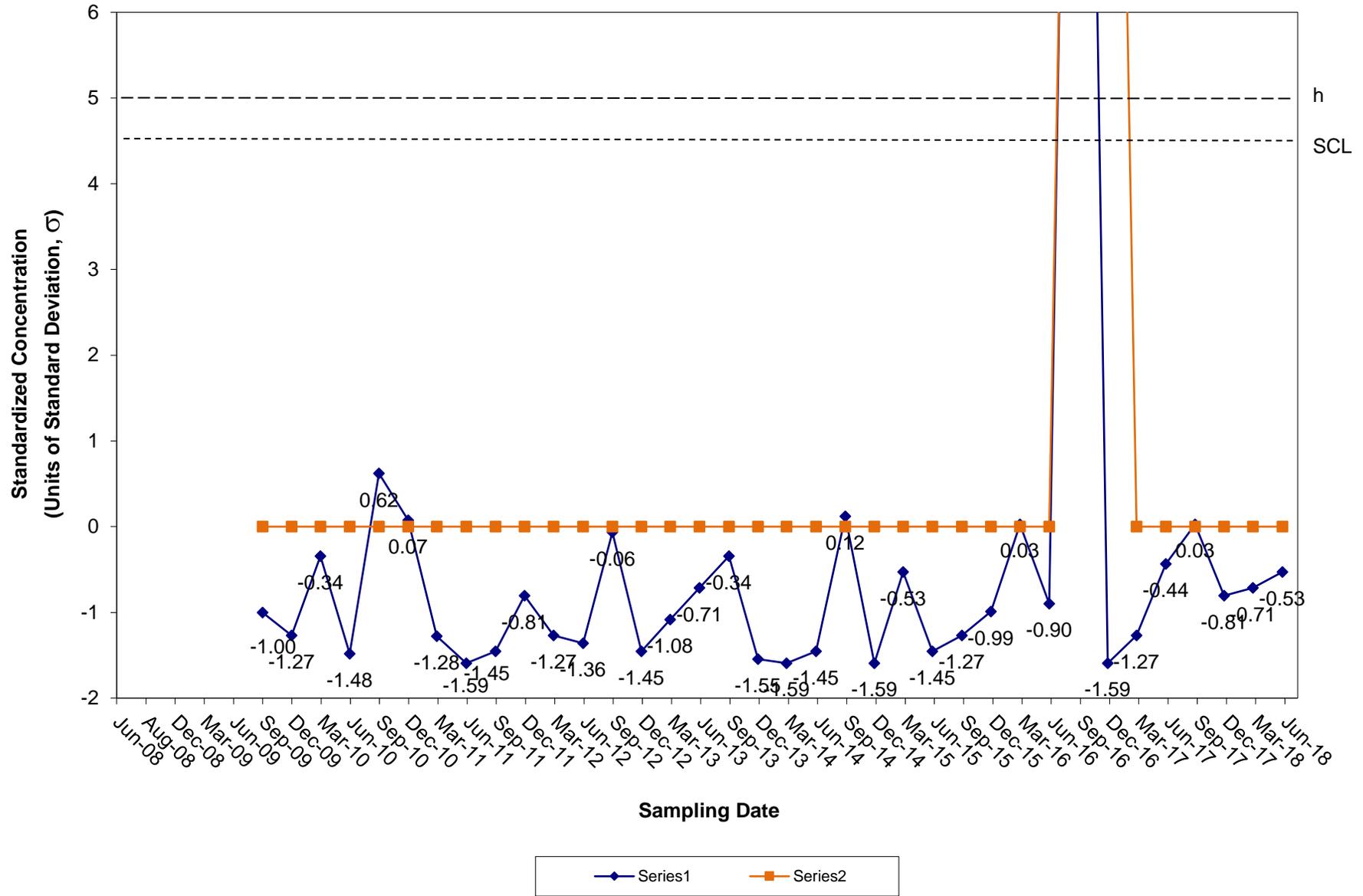
### CUSUM Control Chart for Cadmium Tiverton Landfill Groundwater Compliance Well OW-15



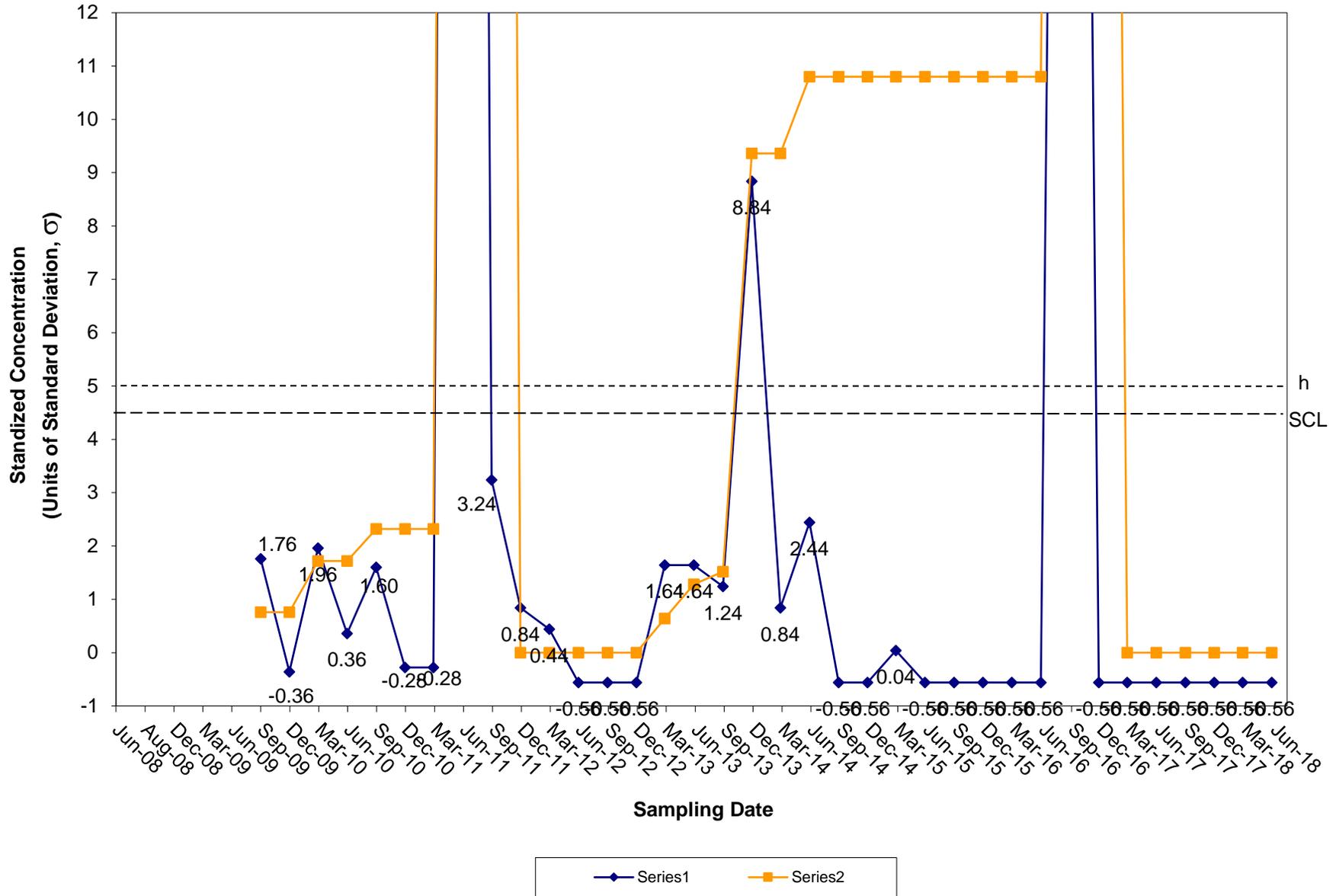
### CUSUM Control Chart for Chromium Tiverton Landfill Groundwater Compliance Well OW-15



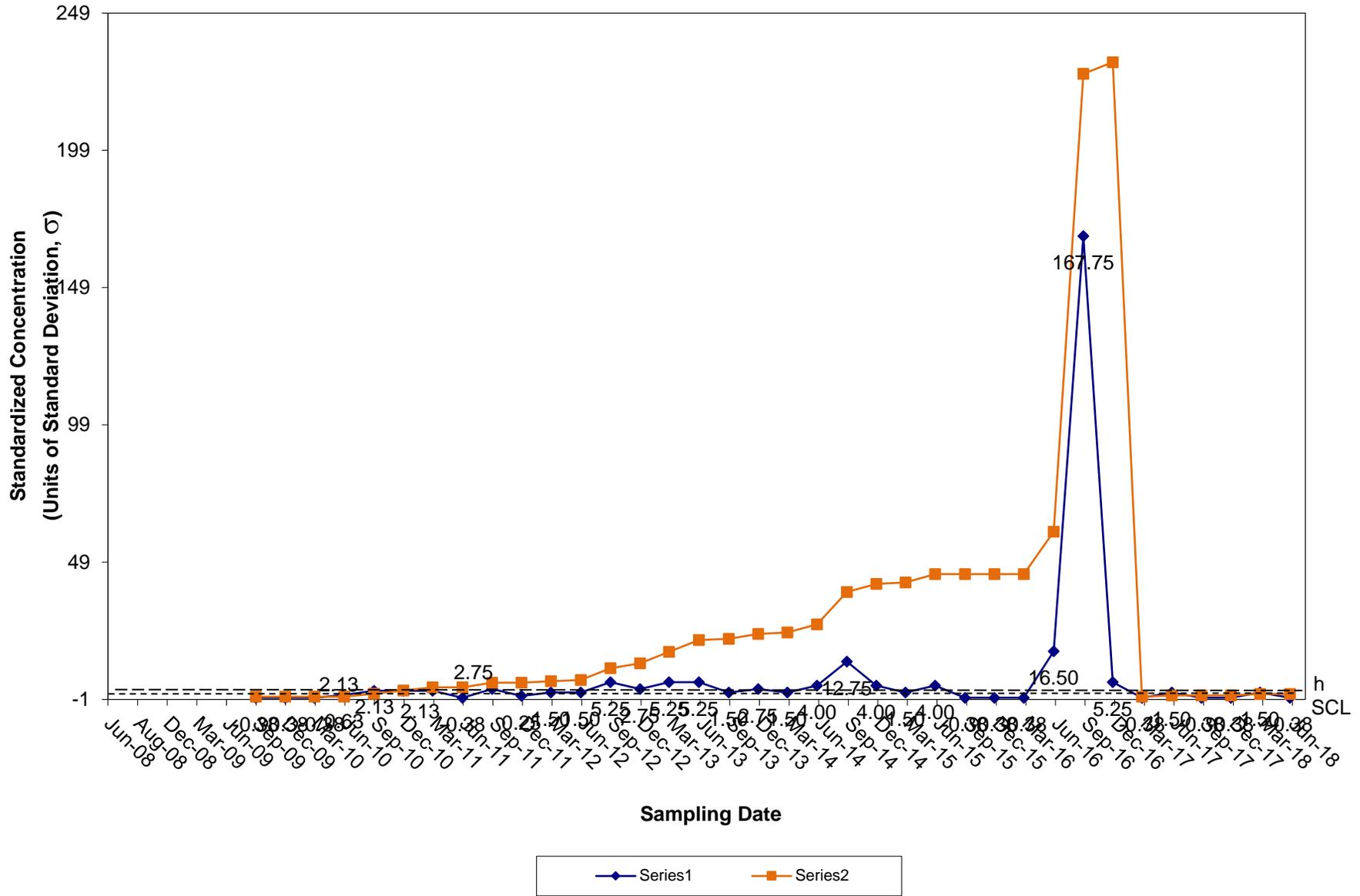
### CUSUM Control Chart for Cobalt Tiverton Landfill Groundwater Compliance Well OW-15



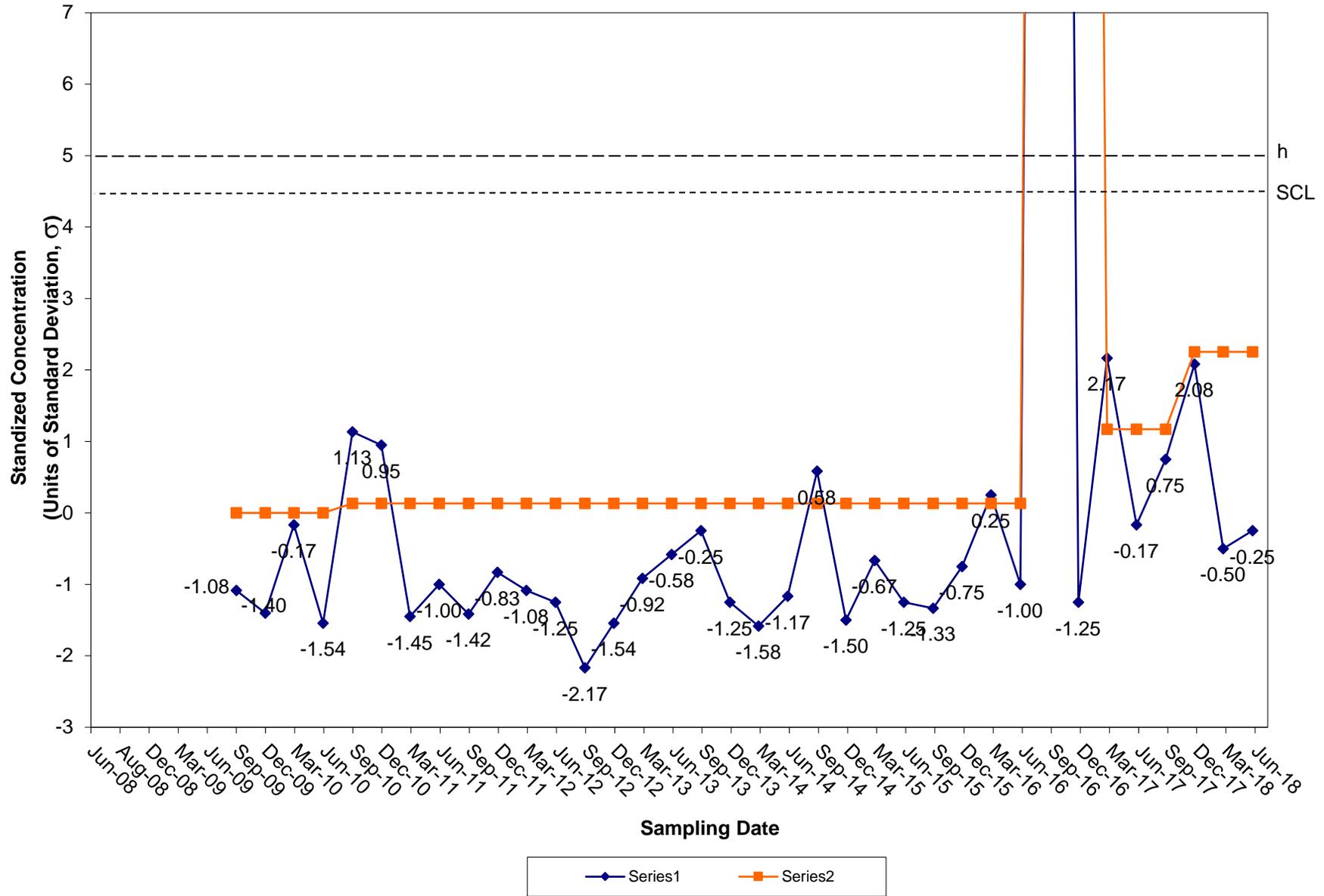
### CUSUM Control Chart for Copper Tiverton Landfill Groundwater Compliance Well OW-15



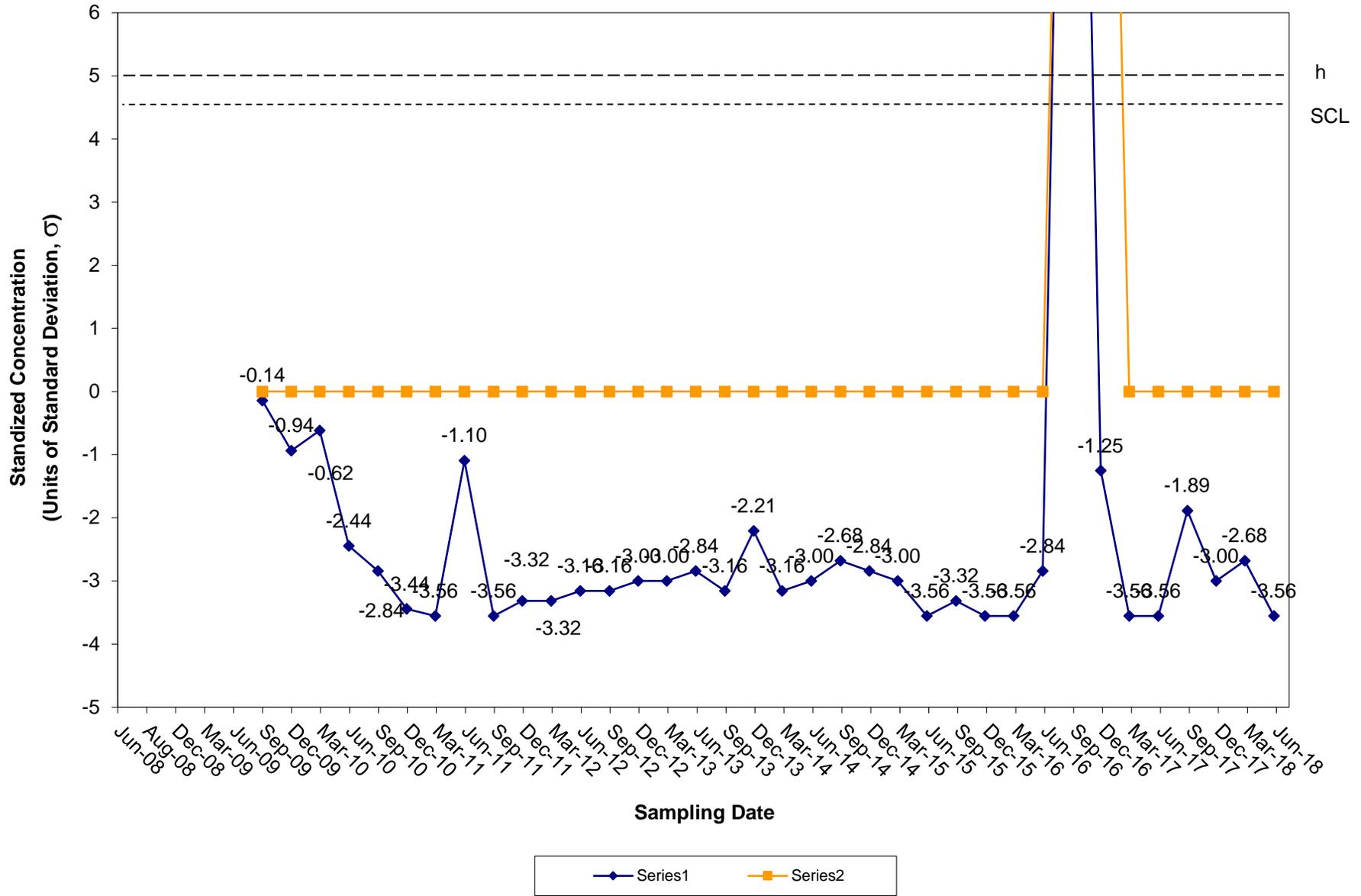
### CUSUM Control Chart for Lead Tiverton Landfill Groundwater Compliance Well OW-15



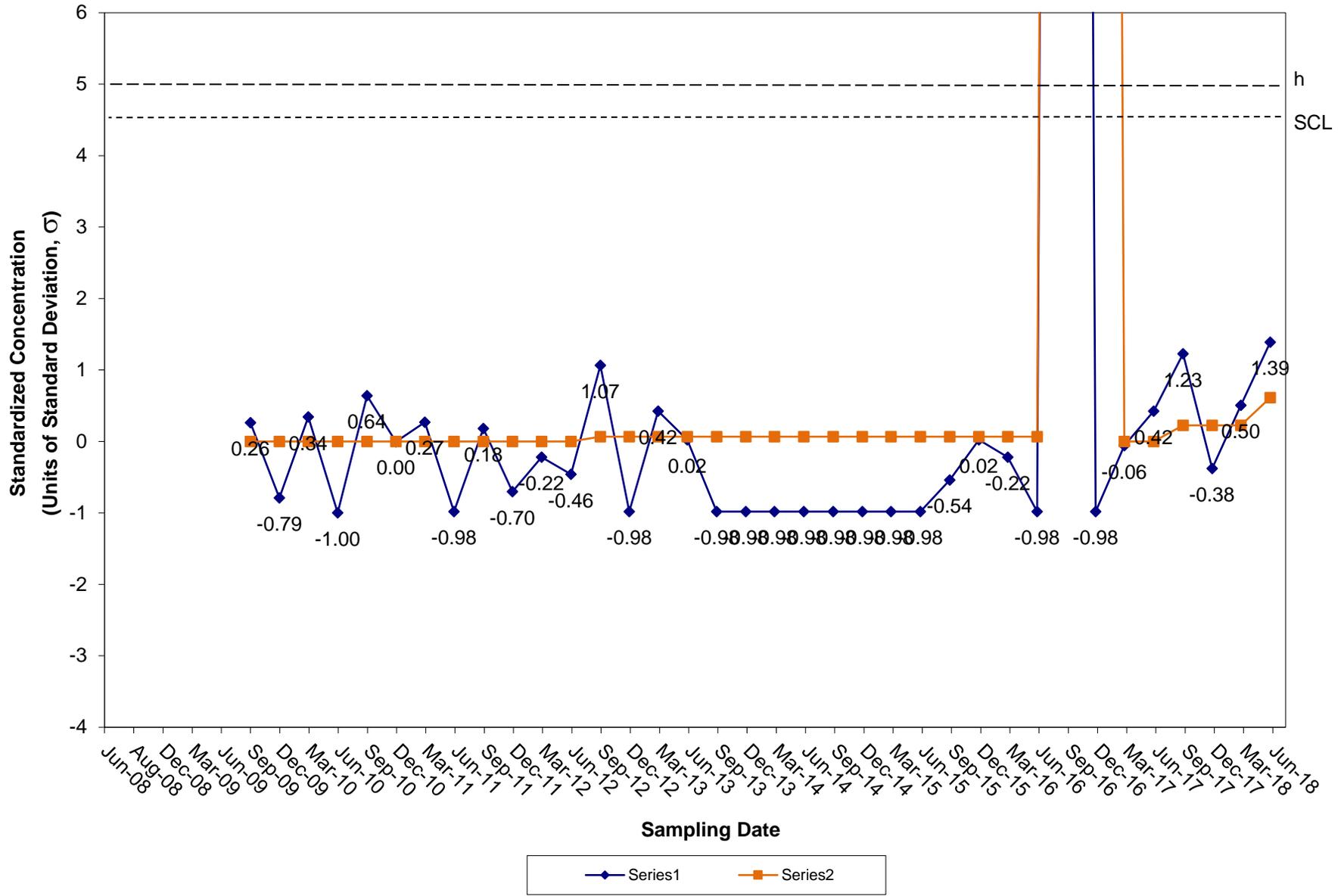
### CUSUM Control Chart for Nickel Tiverton Landfill Groundwater Compliance Well OW-15



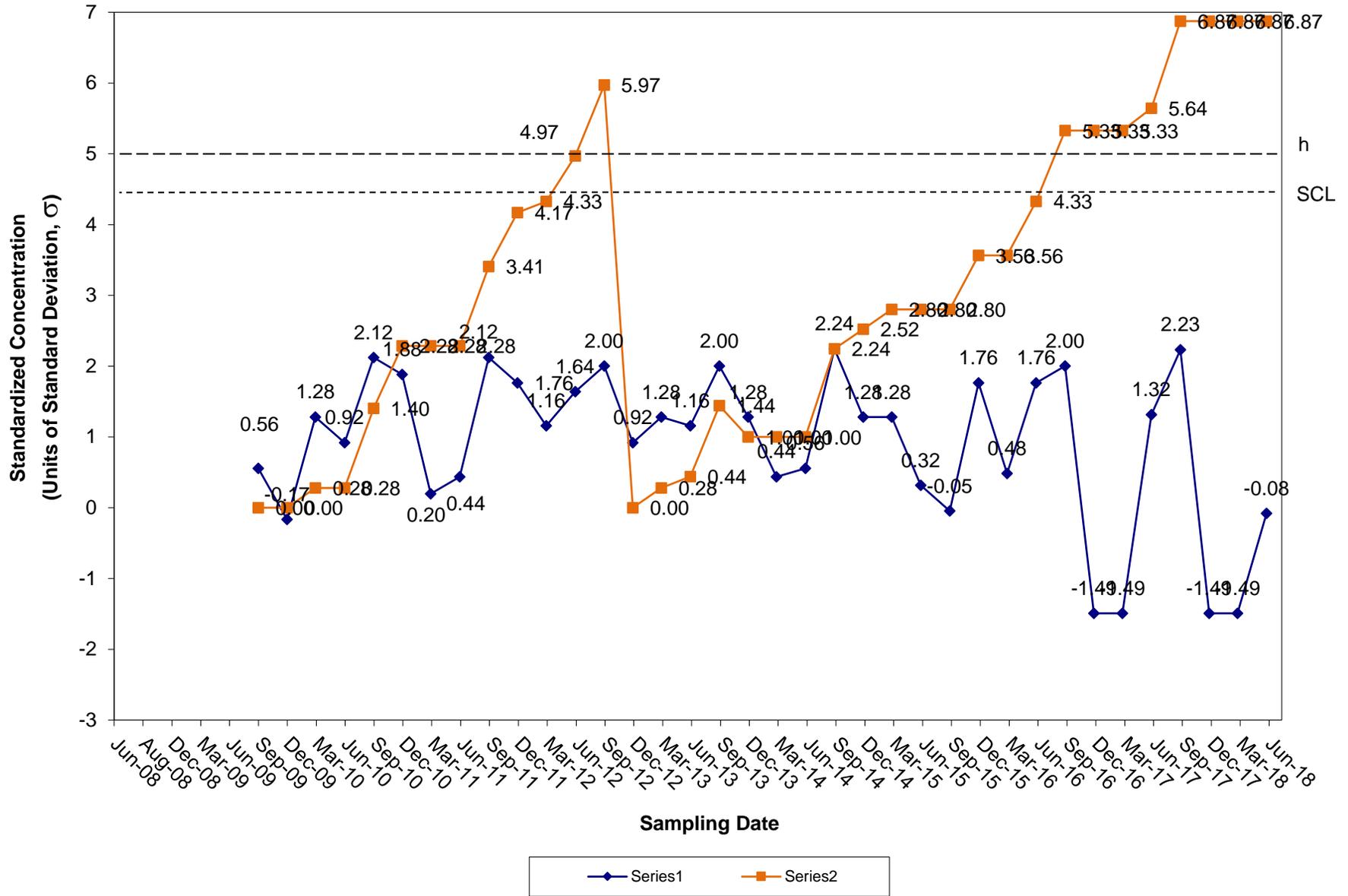
### CUSUM Control Chart for Vanadium Tiverton Landfill Groundwater Compliance Well OW-15



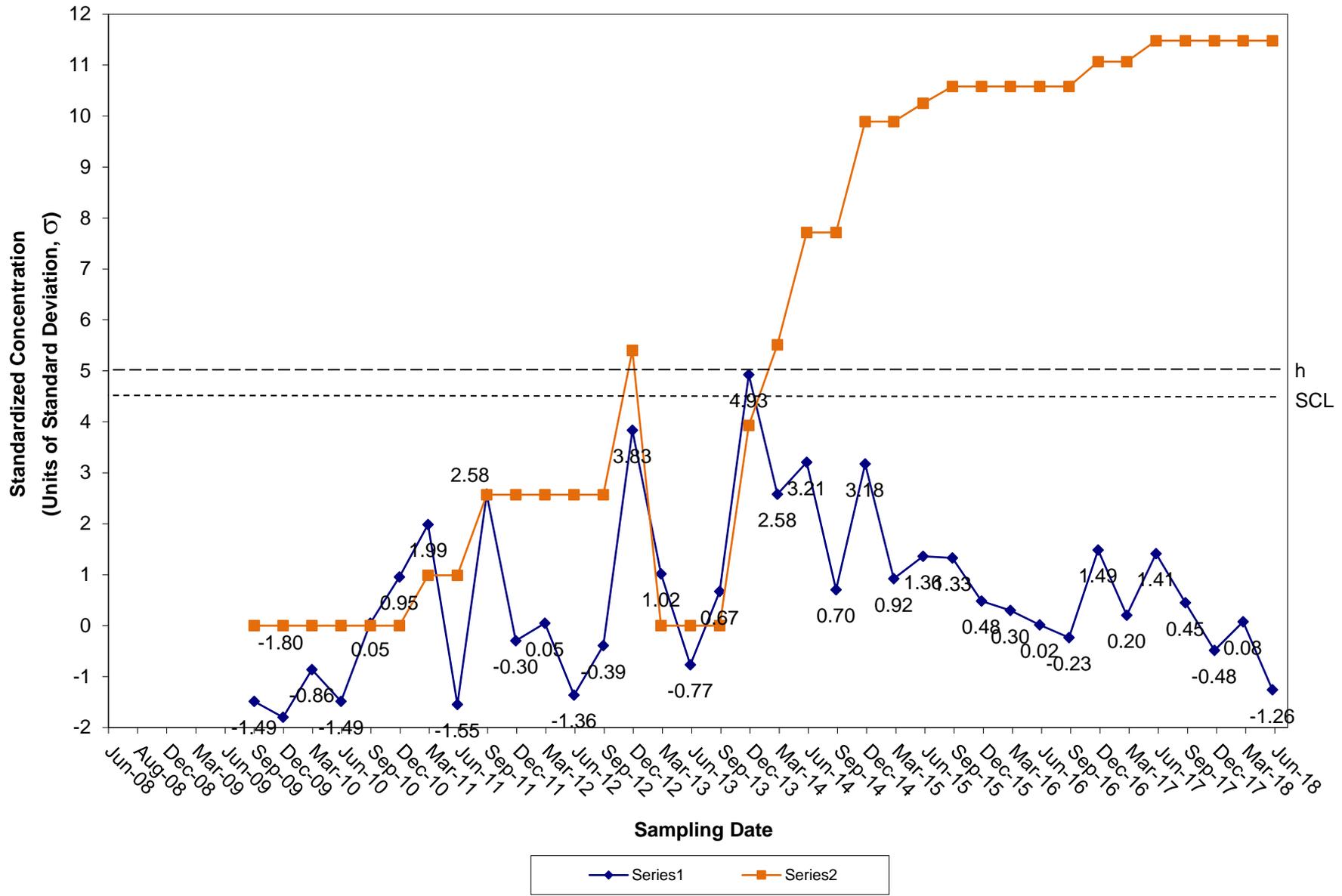
### CUSUM Control Chart for Zinc Tiverton Landfill Groundwater Compliance Well OW-15



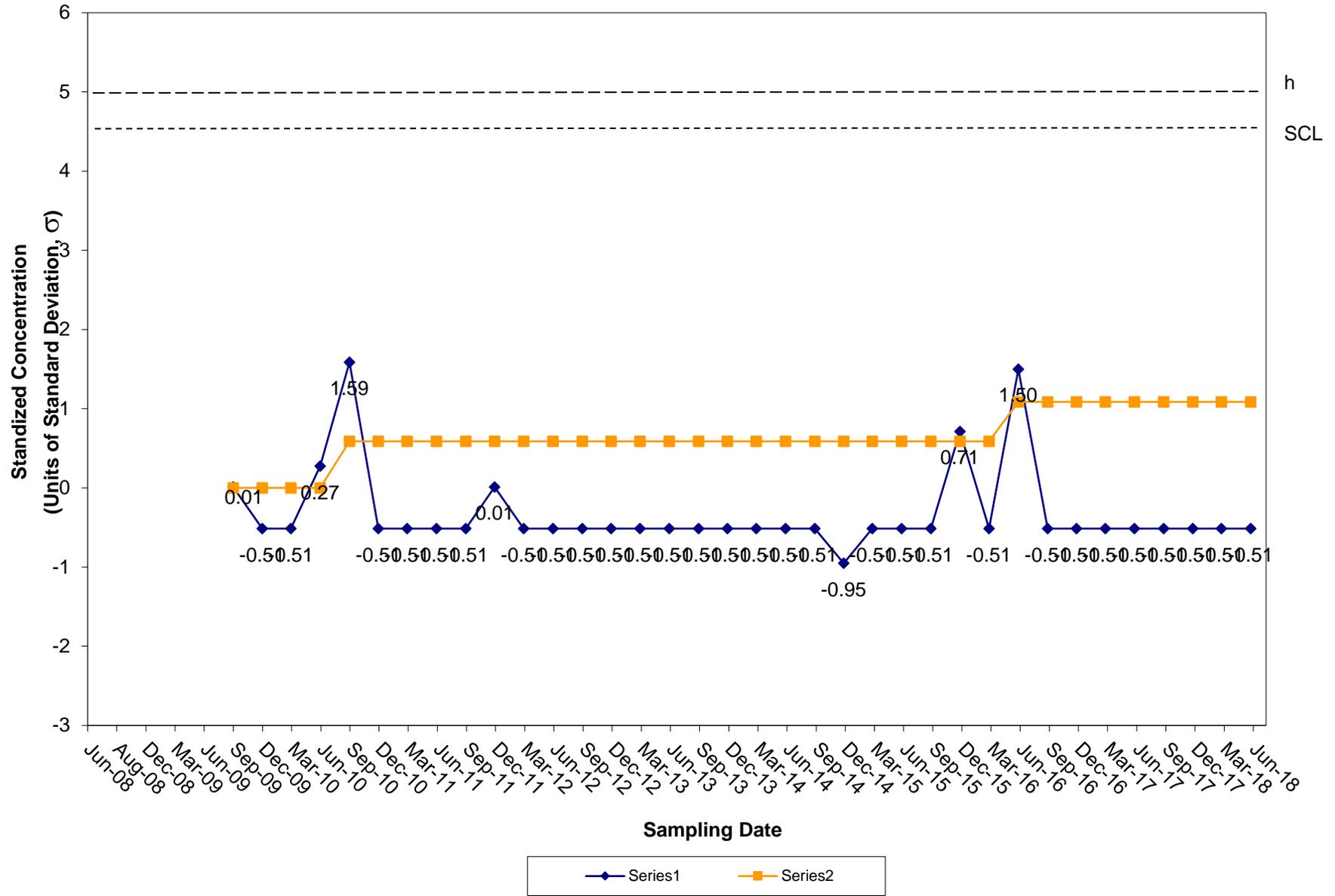
### CUSUM Control Chart for Benzene Tiverton Landfill Groundwater Compliance Well OW-15



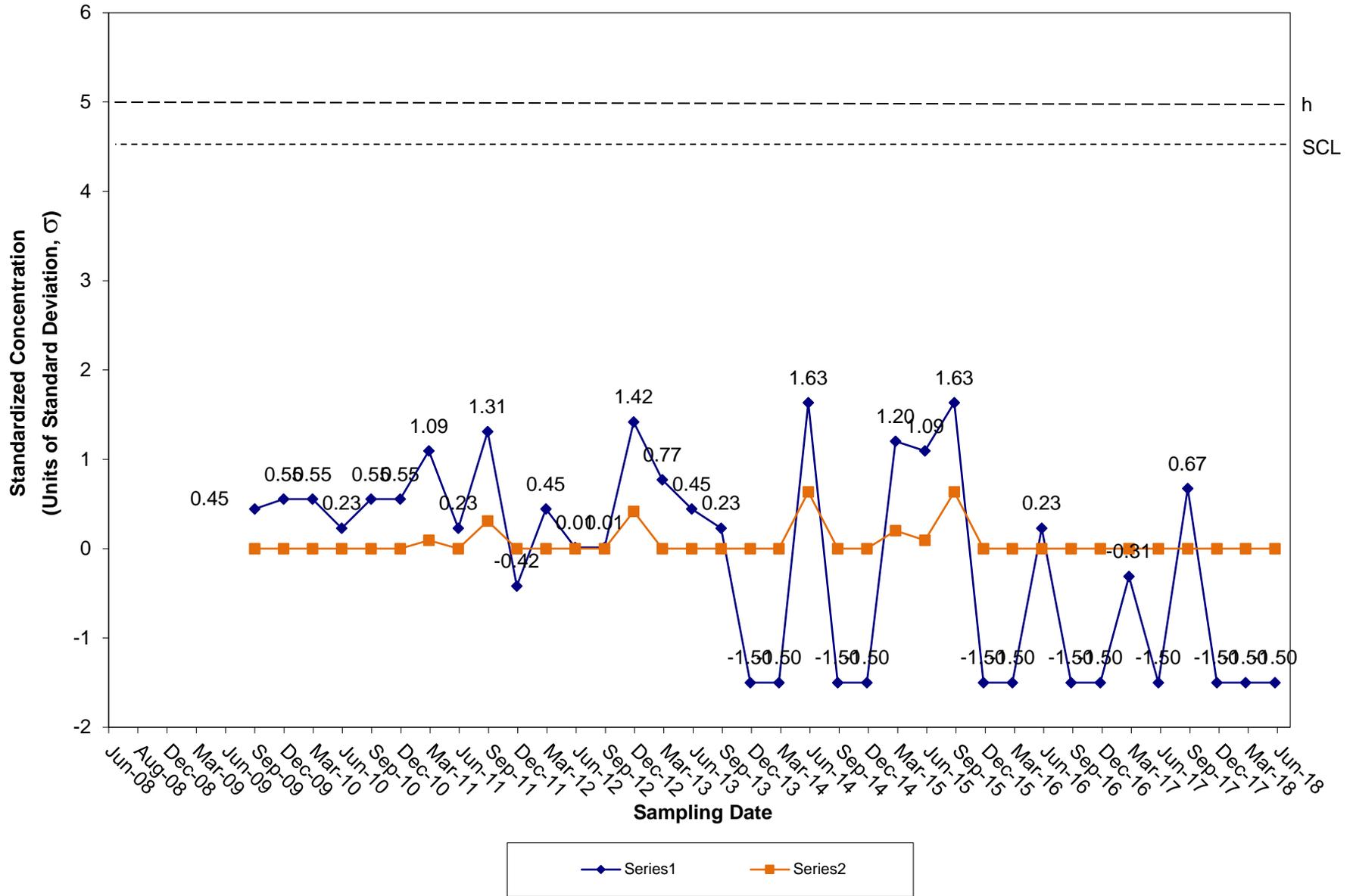
### CUSUM Control Chart for Chlorobenzene Tiverton Landfill Groundwater Compliance Well OW-15



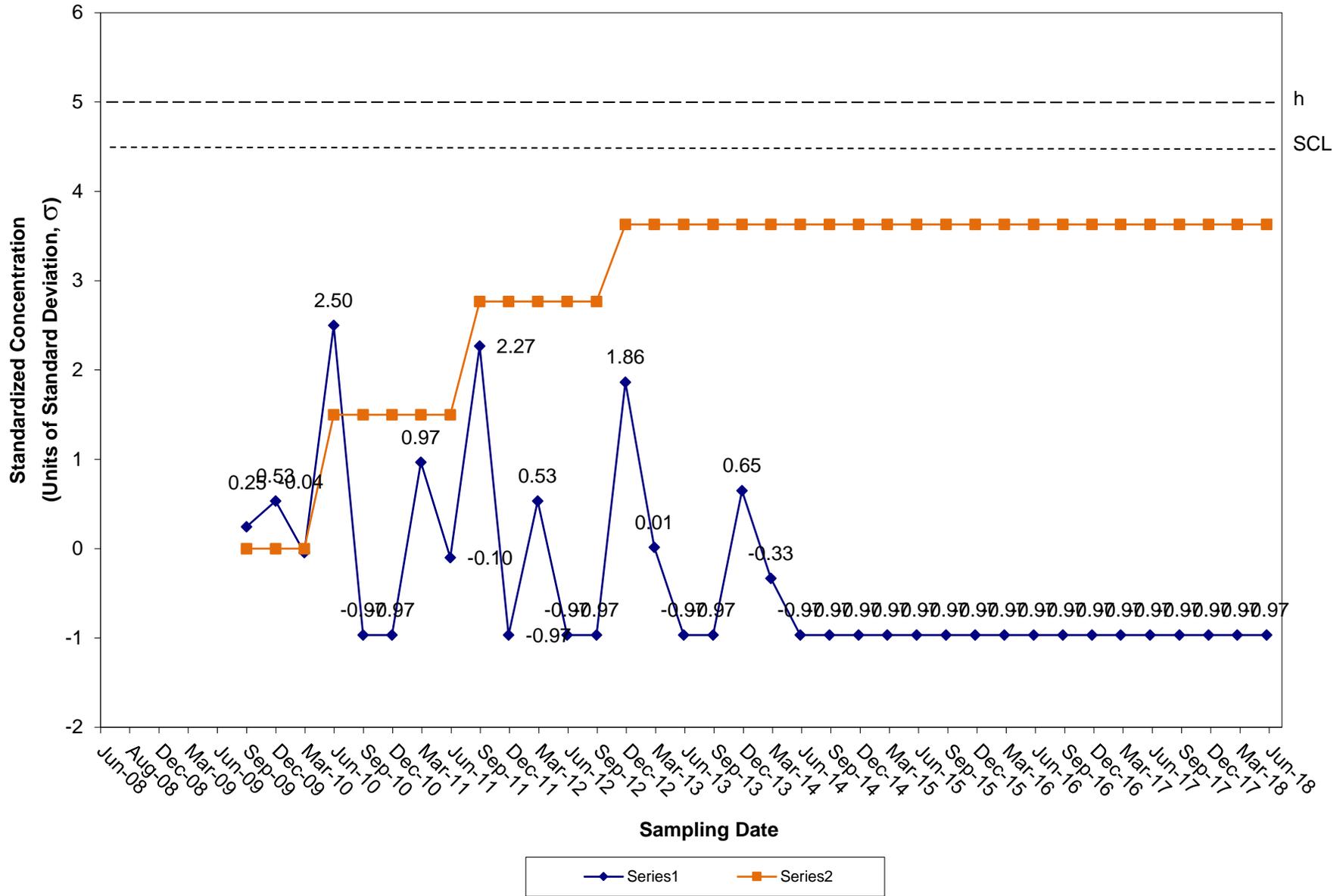
### CUSUM Control Chart for Chloroethane Tiverton Landfill Groundwater Compliance Well OW-15



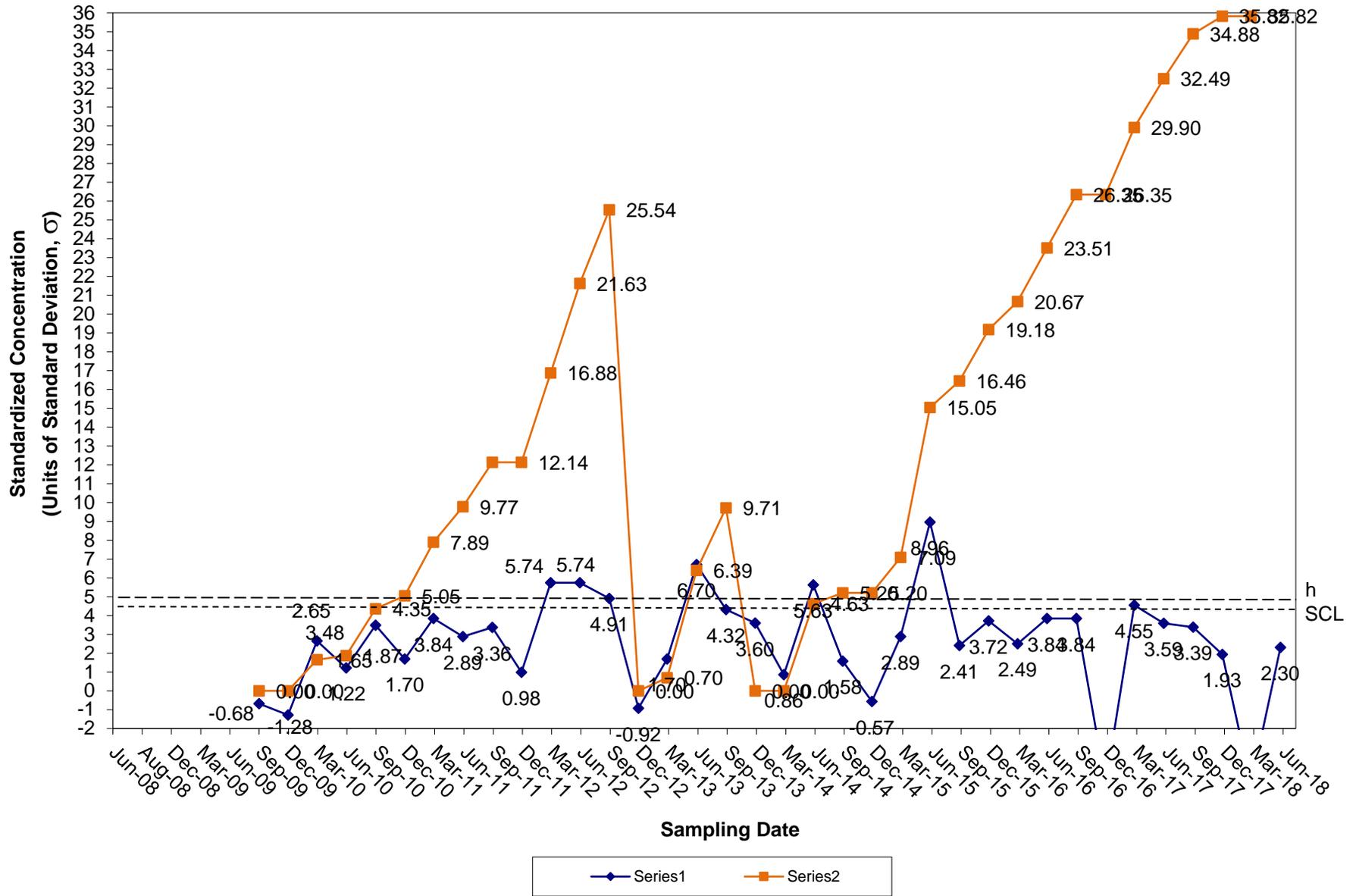
### CUSUM Control Chart for 1,4-Dichlorobenzene Tiverton Landfill Groundwater Compliance Well OW-15



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

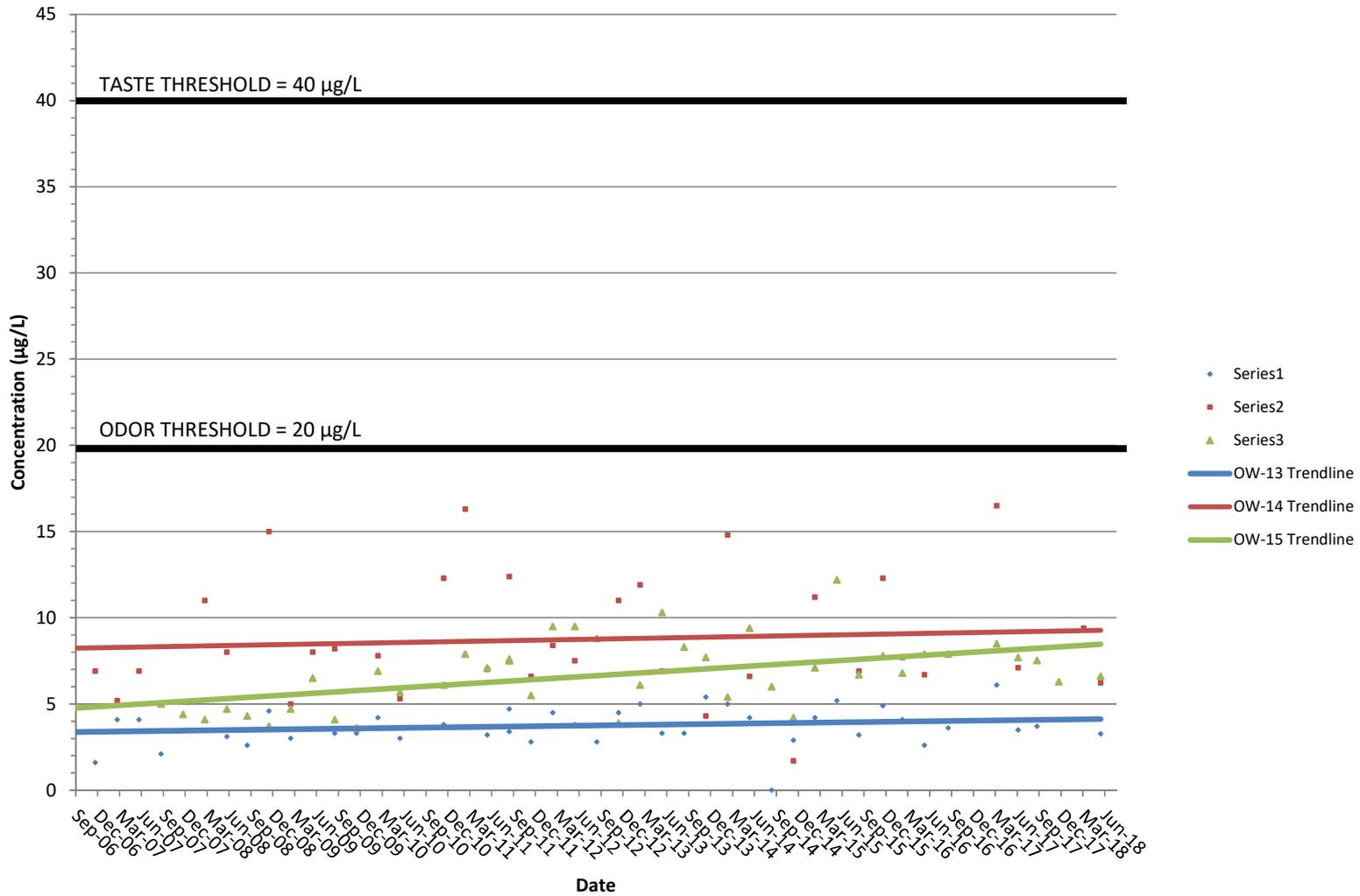


### CUSUM Control Chart for MTBE Tiverton Landfill Groundwater Compliance Well OW-15



**ATTACHMENT NO. 6**  
**REPORTED CONCENTRATIONS OF MTBE FIGURE**

### Reported Concentrations of MTBE September 2006 - June 2018



**ATTACHMENT NO. 7**  
**FIELD SAMPLING DATA SHEETS**

# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

WELL ID: OW-9

DIAMETER (INCHES): 2

## PURGE DATA

WELL DEPTH: 16 feet  
PURGE VOLUME (GAL): 0.4 gallons  
PURGER TYPE: Peristaltic pump

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

## WATER LEVEL DATA

DEPTH: 13.6 feet  
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan  
DEVICE: Water Level Indicator

## FIELD TESTING RESULTS

	READING 1		READING 2	
pH:	5.74	pH UNITS	5.76	pH UNITS
SPEC. COND:	0.062	mS/cm	0.068	mS/cm
TEMPERATURE:	11.6	°C	11.7	°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.

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# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

WELL ID: OW-7

DIAMETER (INCHES): 2

## PURGE DATA

WELL DEPTH: 11.8 feet  
PURGE VOLUME (GAL): 1.9 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>6.52</u>	pH UNITS
SPEC. COND:	<u>0.719</u>	mS/cm
TEMPERATURE:	<u>12.9</u>	°C

	READING 2	
pH:	<u>6.52</u>	pH UNITS
SPEC. COND:	<u>0.720</u>	mS/cm
TEMPERATURE:	<u>12.9</u>	°C

## NOTES:

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

Samples were collected at 1:00 PM.

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# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

WELL ID: OW-12

DIAMETER (INCHES): 2

## PURGE DATA

WELL DEPTH: 16.2 feet  
PURGE VOLUME (GAL): 2.10 gallons  
PURGER TYPE: Peristaltic pump

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

## WATER LEVEL DATA

DEPTH: 3.5 feet  
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan  
DEVICE: Water Level Indicator

## FIELD TESTING RESULTS

	READING 1		READING 2	
pH:	6.07	pH UNITS	6.07	pH UNITS
SPEC. COND:	0.41	mS/cm	0.408	mS/cm
TEMPERATURE:	11.4	°C	11.3	°C

## NOTES:

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

Samples were collected at 2:00 PM.

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# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

WELL ID: OW-13

DIAMETER (INCHES): 2

## PURGE DATA

WELL DEPTH: 14.5 feet  
PURGE VOLUME (GAL): 1.70 gallons  
PURGER TYPE: Peristaltic pump

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

## WATER LEVEL DATA

DEPTH: 4.4 feet  
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan  
DEVICE: Water Level Indicator

## FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.48</u>	pH UNITS
SPEC. COND:	<u>1.178</u>	mS/cm
TEMPERATURE:	<u>12.5</u>	°C

	READING 2	
pH:	<u>6.48</u>	pH UNITS
SPEC. COND:	<u>1.171</u>	mS/cm
TEMPERATURE:	<u>12.5</u>	°C

## NOTES:

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

Samples were collected at 5:30 PM.

# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

WELL ID: OW-14

DIAMETER (INCHES): 2

## PURGE DATA

WELL DEPTH: 10.6 feet  
PURGE VOLUME (GAL): 1 gallons  
PURGER TYPE: Peristaltic pump

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

## WATER LEVEL DATA

DEPTH: 4.6 feet  
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan  
DEVICE: Water Level Indicator

## FIELD TESTING RESULTS

	READING 1		READING 2	
pH:	6.38	pH UNITS	6.39	pH UNITS
SPEC. COND:	1.51	mS/cm	1.524	mS/cm
TEMPERATURE:	15.6	°C	15.6	°C

## NOTES:

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

Samples were collected at 4:30 PM.

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# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

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: 7.6 feet  
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan  
DEVICE: Water Level Indicator

## FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.60</u>	pH UNITS
SPEC. COND:	<u>1.365</u>	mS/cm
TEMPERATURE:	<u>12.7</u>	°C

	READING 2	
pH:	<u>6.60</u>	pH UNITS
SPEC. COND:	<u>1.375</u>	mS/cm
TEMPERATURE:	<u>12.6</u>	°C

## NOTES:

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

Samples were collected at 5:00 PM.

# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.24

DATE: 6/7/2018  
WEATHER: Sunny 70s

WELL ID: OW-16

DIAMETER (INCHES): 2

## PURGE DATA

WELL DEPTH: 45.8 feet  
PURGE VOLUME (GAL): 7.2 gallons  
PURGER TYPE: Peristaltic pump

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

## WATER LEVEL DATA

DEPTH: 2.4 feet  
MEASURE POINT: Top of Casing

ELEVATION: See Site Plan  
DEVICE: Water Level Indicator

## FIELD TESTING RESULTS

	READING 1	
pH:	<u>6.53</u>	pH UNITS
SPEC. COND:	<u>0.772</u>	mS/cm
TEMPERATURE:	<u>12.4</u>	°C

	READING 2	
pH:	<u>6.54</u>	pH UNITS
SPEC. COND:	<u>0.782</u>	mS/cm
TEMPERATURE:	<u>12.4</u>	°C

## NOTES:

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

Samples were collected at 12:30 PM.

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# FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL  
PARE PROJECT NO.: 94139.01 /021

DATE: 6/7/2018  
WEATHER: Sunny 70s

## FIELD TESTING RESULTS:

SURFACE WATER LOCATION: SW-1

### READING 1

pH: 6.92 pH UNITS  
SPEC. COND: 0.54 mS/cm  
TEMPERATURE: 15.5 °C

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SURFACE WATER LOCATION: SW-2

### READING 1

pH: 5.66 pH UNITS  
SPEC. COND: 0.09 mS/cm  
TEMPERATURE: 16.4 °C

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SURFACE WATER LOCATION: SW-3

### READING 1

pH: 6.70 pH UNITS  
SPEC. COND: 0.62 mS/cm  
TEMPERATURE: 16.5 °C