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April 30, 2026

Mr. Brian Rath
Land Quality Bureau
Iowa Department of Natural Resources
6200 Park Ave
Des Moines, IA 20321

**Subject: Interstate Power and Light Company – Marshalltown East Fly Ash Disposal Site (Closed) Permit #64-SDP-05-91C
Request to Permanently Shut-Off Groundwater Gradient Control and Leachate Collection Systems**

Dear Mr. Rath:

On behalf of Interstate Power and Light Company (IPL), Alliant Energy is respectfully requesting permission to permanently cease operation of the Groundwater Gradient Control System (GWGCS) and Leachate Collection System (LCS) associated with the closed Marshalltown East fly ash disposal site located in Marshalltown, Iowa. The request supports progression toward an eventual transfer of post-closure requirements to an environmental covenant and rescission of the site closure permit (#64-SDP-05-91C).

Please call me at (515) 558-9704 or email me at jennycoughlin@alliantenergy.com with any questions regarding the request.

Sincerely,

A handwritten signature in black ink, appearing to read "Jenny Coughlin", is written over a light gray rectangular background.

Jenny Coughlin
Sr. Environmental Specialist
Alliant Energy Corporate Services, Inc.

Enclosure

Cc: SCS Engineers

April 30, 2026
File No. 25225255.00

Mr. Brian Rath
IDNR Land Quality Bureau
6200 Park Avenue
Des Moines, IA 50321

Subject: Interstate Power and Light Company Marshalltown East Fly Ash Disposal Site (Closed)
Permit #64-SDP-05-91C
Request to Permanently Shut-Off Groundwater Gradient Control and Leachate
Collection Systems

Dear Mr. Rath:

On behalf of Interstate Power and Light Company (IPL), SCS Engineers (SCS) has prepared this letter to request permission to permanently cease operation of the Groundwater Gradient Control System (GWGCS) and Leachate Collection System (LCS) associated with the Marshalltown East Fly Ash Disposal Site (Closed) (East Landfill). This request is for the purpose of continuing progression toward an eventual transfer of post closure requirements to an environmental covenant and rescission of Permit #64-SDP-05-91C and Permit #64-SDP-03-90C.

BACKGROUND

The IPL landfill property near Marshalltown, Iowa, contains two separate landfill areas; the West Closed Landfill (West Landfill) and the East Landfill mentioned above. Both landfills were used for the disposal of coal combustion residuals. The West Landfill was operated from 1975 to April 1991, after which it was closed. Closure Permit #64-SDP-03-90C for the West Landfill was issued on November 15, 1993. The East Landfill was operated from July 1, 1993, to June 4, 1995, after which it was closed. Closure Permit #64-SDP-05-90C was issued on July 27, 1995. Each closure permit was issued for a 30-year period. On May 15, 2024, both closure permits were extended five years; the West Landfill closure permit expiration date was extended to November 15, 2028, and the East Landfill closure permit expiration date was extended to July 27, 2030.

Landfill Liner and Cover Construction

The West Landfill is located in a former limestone quarry. The East Landfill was constructed adjacent to but separate from the West Landfill, with a bottom liner elevation approximately 35+ feet above the bottom elevation of the West Landfill. The East Landfill cell construction included the following layers in descending order (ref. Doc # 78688):

1. 1-foot sand drainage layer with an average hydraulic conductivity of approximately 8.5×10^{-3} cm/sec (**leachate collection layer**).
2. 4-foot compacted clay liner with permeability not greater than 1×10^{-7} cm/sec (**landfill liner**).
3. 1-foot general soil fill grading layer.



4. 6-inch sand drainage layer with an average hydraulic conductivity of approximately 8.5×10^{-3} cm/sec (**groundwater gradient control system collection layer**).

Construction of the East Landfill disposal cell was completed in June 1993.

The East Landfill final cover construction included the following layers in descending order (ref. Doc #54098):

1. Vegetated, 6-inch uncompacted topsoil layer.
2. 18-inch compacted clay-rich soil layer (**protective layer**).
3. 40 mil geomembrane liner.
4. Geotextile fabric.

Construction of the East Landfill final cover was completed on October 26, 1995.

Leachate collection from the East Landfill ceased on October 8, 2014, when the leachate transfer line valve was closed (ref. Doc #82021). The leachate collection tank was pumped out on October 31, 2014. Approximately 10,000 gallons of leachate were removed from the tank (ref. Doc #82021) at that time. The valve remains closed, indicating that leachate has not been collected from the East Landfill for more than 11 years, with the exception of a single collection event that occurred in August 2017 as part of the leachate transfer line inspection (Doc #90235), during which approximately 4,624 gallons were collected and removed. The valve closure in October 2014 was not documented as a permanent approval with regard to leachate collection. Operation of the groundwater gradient control system (GWGCS) ceased with the temporary shutoff approval granted by the Iowa Department of Natural Resources (DNR) via email dated November 13, 2025 (ref. Doc #114718).

GWGCS Flow Review

Flow measurements from the GWGCS discharge were compiled for the period of record beginning with October 2014 to coincide with the period of time the valve on the leachate transfer line was closed. Table 1 in **Attachment A** contains a summary of the GWGCS flow measurements/observations. Table 1 indicates that the vast majority of the GWGCS discharge observations were no flow. Only the two observations in 2025 recorded flow from the pipe outlet. Also, it should be noted that due to the discharge pipe being located in the axis of a ravine, surface runoff from precipitation or snowmelt occasionally submerged at least a portion of the discharge pipe outlet, making measurement of GWGCS discharge, if present, not possible. Based on this information, it appears that the GWGCS has had minimal influence on groundwater gradients at the site, at least since October 2014.

Groundwater Data Review

The two groundwater monitoring wells in closest proximity to the East Landfill and downgradient based on water table contour maps are MW-13 and MW-23. Total metals and sulfate groundwater analytical data from these monitoring wells indicate that the groundwater is comparable to background with only slightly elevated concentrations of certain constituents, not necessarily indicative of groundwater impact, as discussed below.

- Boron (MW-13 and MW-23): More than half of the concentrations were J-flagged (below the method limit of quantitation), and the maximum measured concentration (140 micrograms per liter [$\mu\text{g/L}$], 9/1/2020, MW-23) was less than 3 percent of the Groundwater Protection Standard (GWPS) (6,000 $\mu\text{g/L}$).
- Calcium (MW-13 and MW-23): Only three samples analyzed to date. Calcium does not have a regulatory standard.
- Fluoride (MW-13 and MW-23): Only three samples analyzed to date. The highest concentrations in both monitoring well samples appear influenced by elevated Total Suspended Solids (TSS). In the MW-13 dataset, the only detection of fluoride above the reporting limit was associated with a TSS concentration more than 3x the next highest concentration measured in MW-13. In the MW-23 dataset, the highest reported concentration (0.38 (J) mg/L , 9/26/2024) was J-flagged, which was associated with the only TSS detection above the reporting limit. The J-flagged concentration was less than 20 percent of the GWPS (4 milligrams per liter [mg/L]).
- Lithium (MW-23): Only three samples analyzed to date. Concentrations in MW-23 exceed the GWPS (14 $\mu\text{g/L}$); however, it appears that higher concentrations of lithium are naturally occurring at the site, as nearly 65 percent of the monitoring wells sampled had measured concentrations exceeding the GWPS, including wells hydraulically upgradient and side-gradient from the disposal areas.
- Molybdenum (MW-23): Only three samples analyzed to date. The only concentration detected above the reporting limit in MW-23 was associated with the elevated TSS sample discussed above under Fluoride. The other two concentrations measured in the MW-23 samples were J-flagged. The maximum concentration (2.7 $\mu\text{g/L}$, 9/16/2025) was less than 7 percent of the GWPS (40 $\mu\text{g/L}$).
- Selenium (MW-23): Only a single detection (September 2017) above the reporting limit since 2016, when low-flow sampling was implemented (ten samples total). TSS sample data is not available until September 2023. The other nine samples were either non-detect or J-flagged. The single detection concentration (6.1 $\mu\text{g/L}$, 9/13/2017) was less than 13 percent of the GWPS (50 $\mu\text{g/L}$).
- Sulfate (MW-13 and MW-23): All concentrations were below the Secondary Maximum Contaminant Level (SMCL), which is generally an aesthetic-based limit associated with taste and not a health standard. Approximately 90 percent of the measured concentrations in these two wells since 1999 have been below one-half the SMCL (250 mg/L).

Time series graphs and data tables comparing the concentrations of water table monitoring wells MW-13 and MW-23 to background monitoring wells MW-8, MW-9, and MW-10 are included in **Attachment B**.

PERMANENT SHUTOFF REQUEST

Leachate collection from the East Landfill ceased more than 11 years ago, and, considering the GWGCS flow information presented above, it does not appear that the GWGCS system has appreciably influenced groundwater gradients in the vicinity of the East Landfill during at least this same 11-year time period. Therefore, the groundwater analytical data for this 11-year time period from monitoring wells MW-13 and MW-23 may be interpreted as effectively having been collected in the absence of both active leachate collection and groundwater gradient control. As discussed above, both these groundwater monitoring wells appear unimpacted, as analyte concentrations measured in these wells are generally consistent with background or only slightly elevated as discussed above, with elevated TSS being a possible explanation elevated metals concentrations.

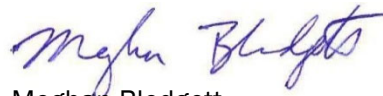
Based on the information presented herein, IPL requests that the current temporary shut-off status of the leachate collection system and the GWGCS for the East Landfill be made permanent. If the DNR concurs with this request, a plan to implement permanent shut-off of these two systems will be prepared and submitted under separate cover for DNR review.

We appreciate your consideration of this request. If you have any questions regarding this request, please contact Jenny Coughlin at (515) 558-9704 or jennycoughlin@alliantenergy.com.

Sincerely,



Timothy C. Buelow, P.E.
VP/Senior Project Advisor
SCS Engineers



Meghan Blodgett
Hydrogeologist
SCS Engineers

TCB/REO/MDB/EJN

cc: Jenny Coughlin, Alliant Energy

Encl. Attachment A – Table 1, GWGCS Flow Summary
Attachment B – Time Series Graphs and Data Tables

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Attachment A

Table 1 – GWGCS Flow Summary

Table 1
Groundwater Gradient Control System Discharge Summary
Interstate Power and Light Company
East Closed Landfill

Date	gpm	gpd	Comments
10/31/2014	0.000	0	No flow, ponded water.
11/14/2014	0.000	0	No flow, ponded water.
12/9/2014	0.000	0	No flow, ponded water.
1/20/2015	0.000	0	No flow, ponded water.
2/23/2015	0.000	0	No flow, ponded water.
5/22/2015	0.000	0	No flow, ponded water.
6/29/2015	0.000	0	No flow, ponded water.
7/28/2015	0.000	0	No flow, ponded water.
8/24/2015	0.000	0	No flow, ponded water.
10/30/2015	0.000	0	No flow, ponded water.
11/20/2015	0.000	0	No flow, ponded water.
12/28/2015	0.000	0	No flow, ponded water.
1/26/2016	0.000	0	No flow, ponded water.
2/20/2016	NM	NM	Heavy runoff from snowmelt uphill.
3/14/2016	0.000	0	No flow, ponded water.
5/12/2016	0.000	0	No flow, ponded water.
6/23/2016	0.000	0	No flow, ponded water.
7/19/2016	0.000	0	No flow.
8/17/2016	0.000	0	No flow.
10/28/2016	0.000	0	No flow.
11/30/2016	0.000	0	No flow.
12/29/2016	0.000	0	No flow, ponded water.
1/23/2017	0.000	0	No flow.
2/23/2017	0.000	0	No flow.
3/24/2017	0.000	0	No flow.
5/30/2017	0.000	0	No flow.
6/20/2017	0.000	0	No flow.
7/14/2017	0.000	0	No flow.
9/6/2017	0.000	0	No flow.
10/16/2017	0.000	0	No flow.
11/8/2017	0.000	0	No flow.
1/8/2018	0.000	0	No flow.
1/30/2018	0.000	0	No flow.
2/28/2018	0.000	0	No flow.
5/21/2018	0.000	0	No flow.
6/30/2018	0.000	0	No flow.
7/31/2018	0.000	0	No flow.
9/5/2018	NM	NM	Heavy running water. Rain.
9/13/2018	NM	NM	6" deep.
9/19/2019	NM	NM	No comment.
4/16/2020	0.000	0	Dry.
9/2/2020	0.000	0	Dry.
9/29/2021	0.000	0	Dry.
9/21/2022	0.000	0	Dry.
9/22/2023	0.000	0	Dry.
9/26/2024	0.000	0	Not flowing.
4/25/2025	0.264	380	250ml/15secs
9/17/2025	0.317	456	100ml/5 secs

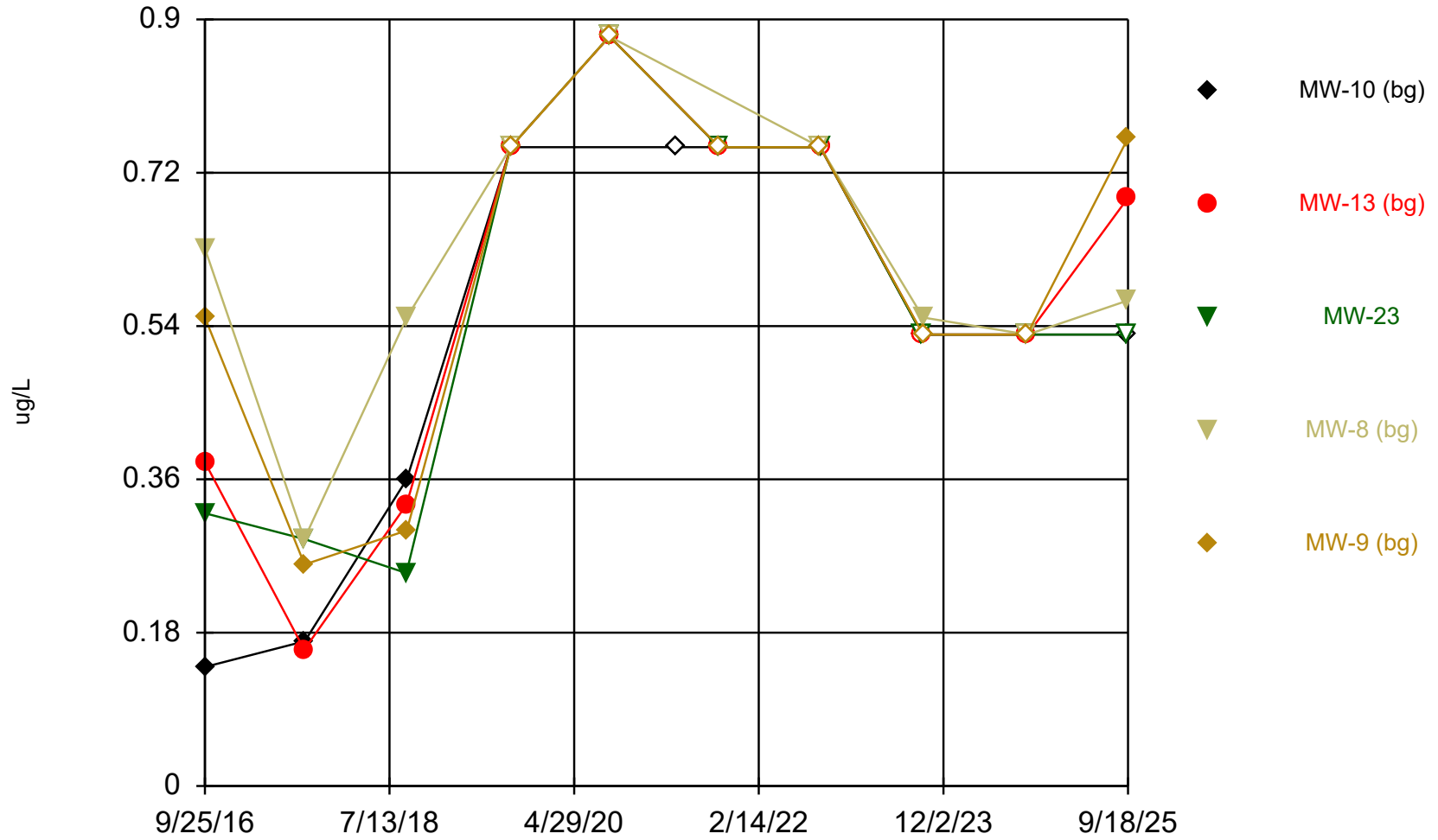
Notes:

NM: Indicates Not Measured.

Attachment B

Time Series Graphs and Data Tables

Arsenic



Time Series Analysis Run 3/9/2026 3:46 PM

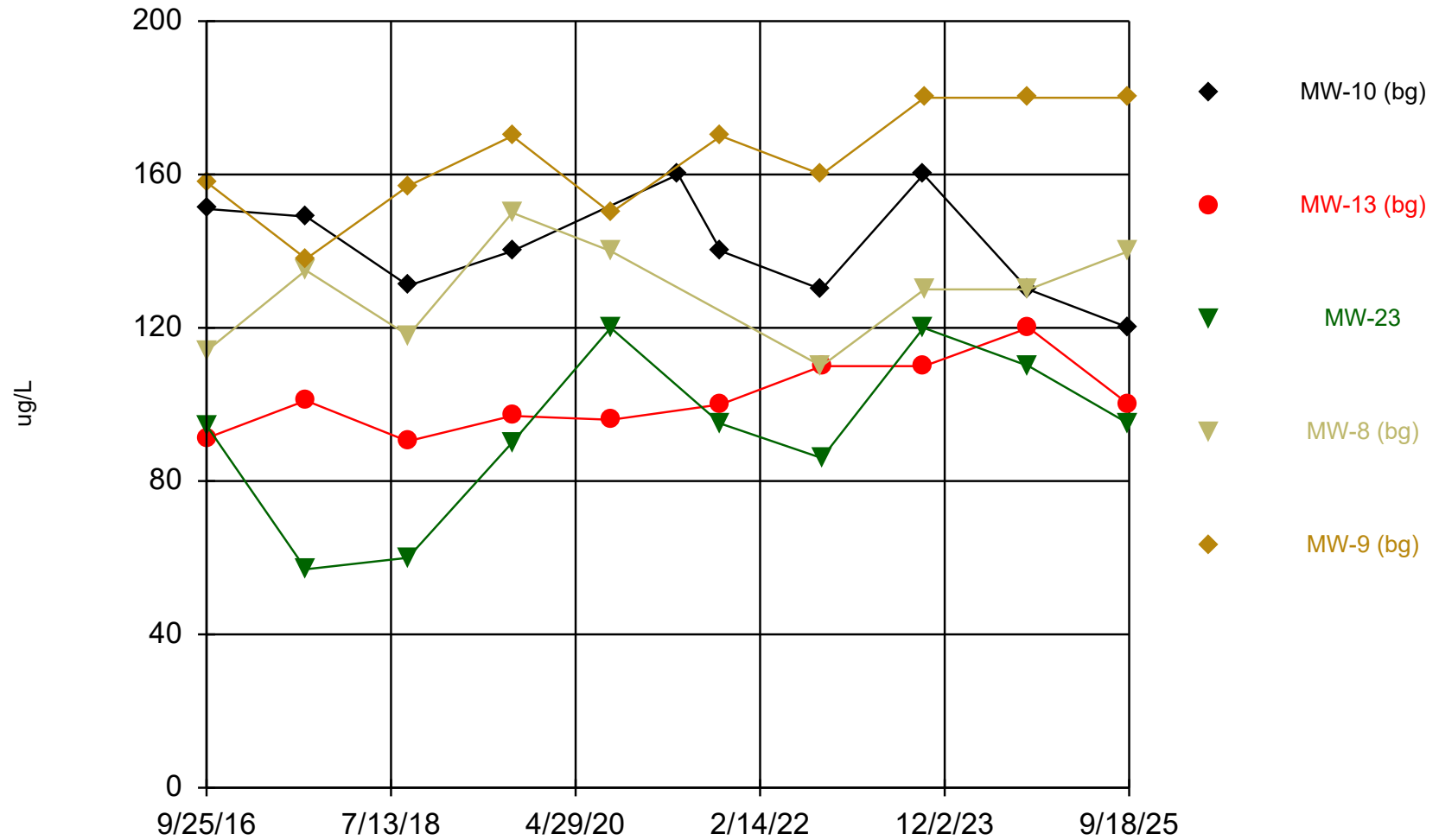
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Arsenic (ug/L) Analysis Run 3/9/2026 3:49 PM
 Marshelltown E and W Closed LFs Client: SCS Engineers Data: Marshelltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		0.38 (J)			0.55 (J)
9/26/2016				0.63 (J)	
9/27/2016	0.14 (J)				
9/28/2016			0.32 (J)		
9/13/2017		0.16 (J)	0.29 (J)	0.29 (J)	
9/14/2017					0.26 (J)
9/15/2017	0.17 (J)				
9/11/2018		0.33 (J)	0.25 (J)		
9/12/2018	0.36 (J)			0.55 (J)	0.3 (J)
9/16/2019		<0.75	<0.75		
9/17/2019	<0.75			<0.75	<0.75
9/1/2020			<0.88	<0.88	<0.88
9/2/2020		<0.88			
4/29/2021	<0.75				
9/27/2021		<0.75	<0.75		
9/28/2021	<0.75				<0.75
9/20/2022	<0.75			<0.75	<0.75
9/21/2022		<0.75	<0.75		
9/18/2023	<0.53 (U)		<0.53 (U)		
9/20/2023		<0.53 (U)			
9/21/2023				0.55 (J)	<0.53 (U)
9/24/2024	<0.53				<0.53
9/26/2024		<0.53	<0.53	<0.53	
9/16/2025			<0.53 (U)		
9/17/2025		0.69 (J)		0.57 (J)	0.76 (J)
9/18/2025	<0.53 (U)				

Barium



Time Series Analysis Run 3/9/2026 3:46 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

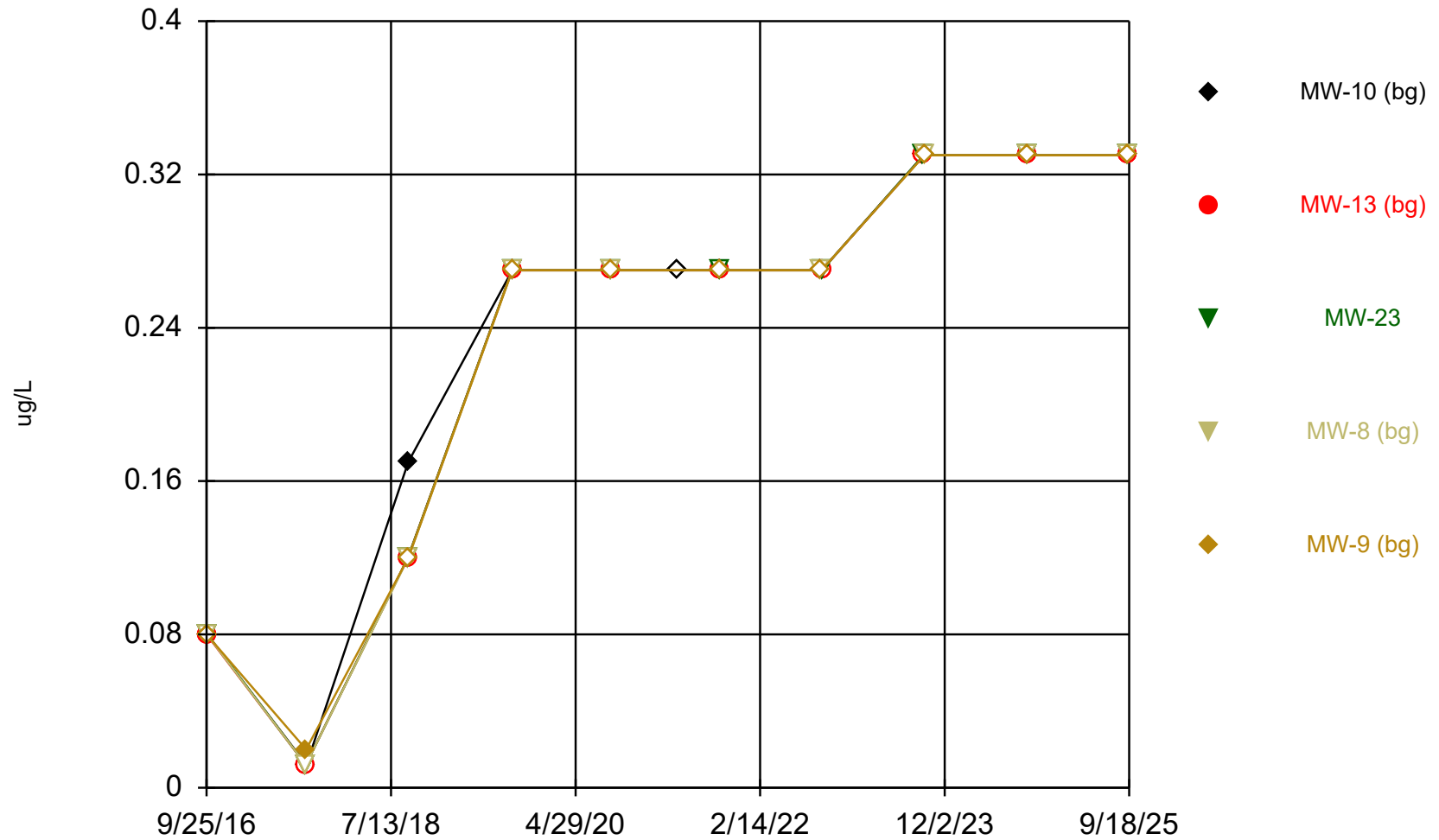
Time Series

Constituent: Barium (ug/L) Analysis Run 3/9/2026 3:49 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		91.2			158
9/26/2016				114	
9/27/2016	151				
9/28/2016			94.2		
9/13/2017		101	57	135	
9/14/2017					138
9/15/2017	149				
9/11/2018		90.4	60		
9/12/2018	131			118	157
9/16/2019		97	90		
9/17/2019	140			150	170
9/1/2020			120	140	150
9/2/2020		96			
4/29/2021	160				
9/27/2021		100	95		
9/28/2021	140				170
9/20/2022	130			110	160
9/21/2022		110	86		
9/18/2023	160		120		
9/20/2023		110			
9/21/2023				130	180
9/24/2024	130				180
9/26/2024		120	110	130	
9/16/2025			95		
9/17/2025		100		140	180
9/18/2025	120				

Beryllium



Time Series Analysis Run 3/9/2026 3:46 PM

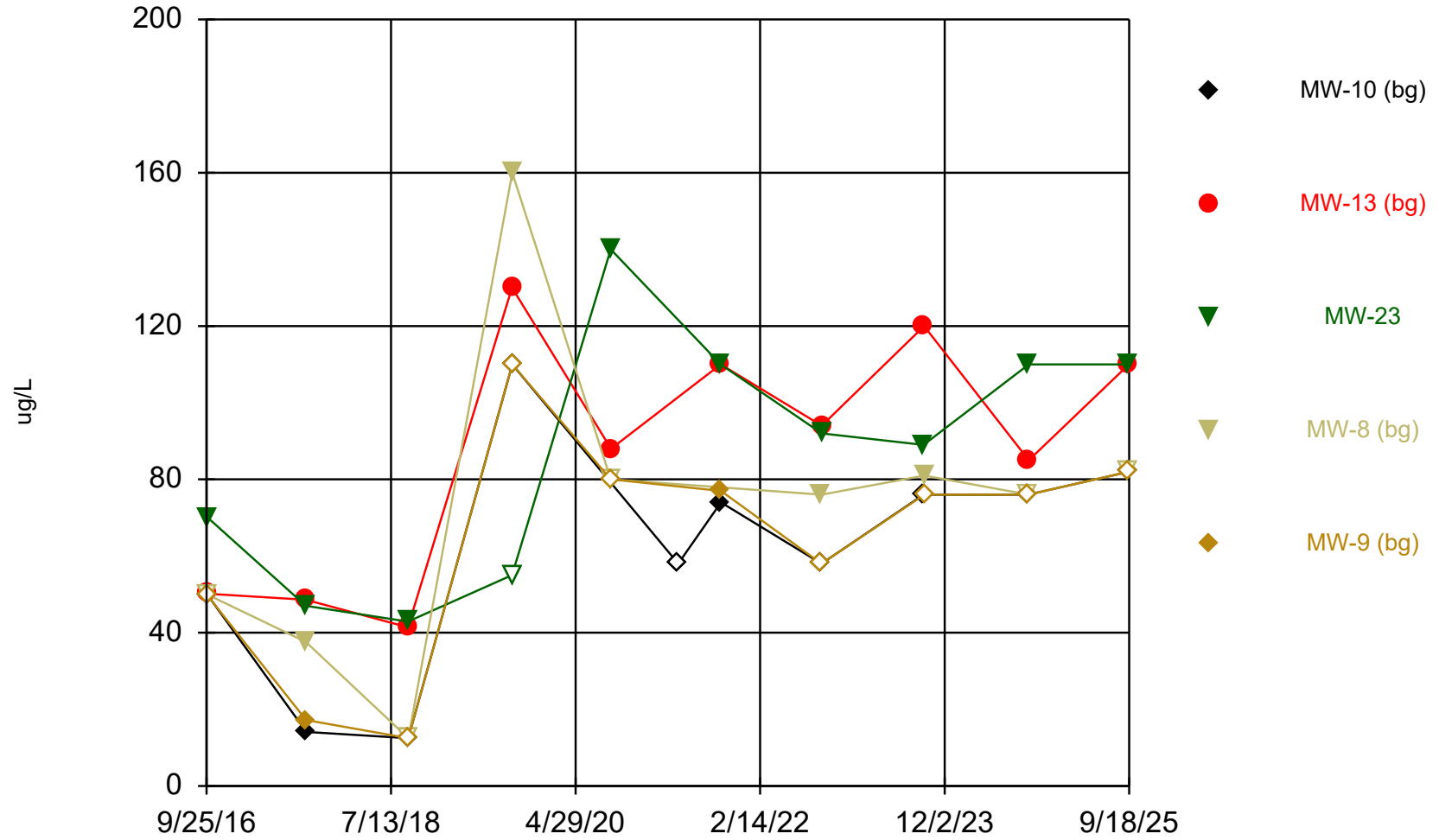
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Beryllium (ug/L) Analysis Run 3/9/2026 3:49 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		<0.08			<0.08
9/26/2016				<0.08	
9/27/2016	<0.08				
9/28/2016			<0.08		
9/13/2017		<0.012	<0.012	<0.012	
9/14/2017					0.02 (J)
9/15/2017	<0.012				
9/11/2018		<0.12	<0.12		
9/12/2018	0.17 (J)			<0.12	<0.12
9/16/2019		<0.27	<0.27		
9/17/2019	<0.27			<0.27	<0.27
9/1/2020			<0.27	<0.27	<0.27
9/2/2020		<0.27			
4/29/2021	<0.27				
9/27/2021		<0.27	<0.27		
9/28/2021	<0.27				<0.27
9/20/2022	<0.27			<0.27	<0.27
9/21/2022		<0.27	<0.27		
9/18/2023	<0.33 (U)		<0.33 (U)		
9/20/2023		<0.33 (U)			
9/21/2023				<0.33 (U)	<0.33 (U)
9/24/2024	<0.33				<0.33
9/26/2024		<0.33	<0.33	<0.33	
9/16/2025			<0.33 (U)		
9/17/2025		<0.33 (U)		<0.33 (U)	<0.33 (U)
9/18/2025	<0.33 (U)				

Boron



Time Series Analysis Run 3/9/2026 3:46 PM

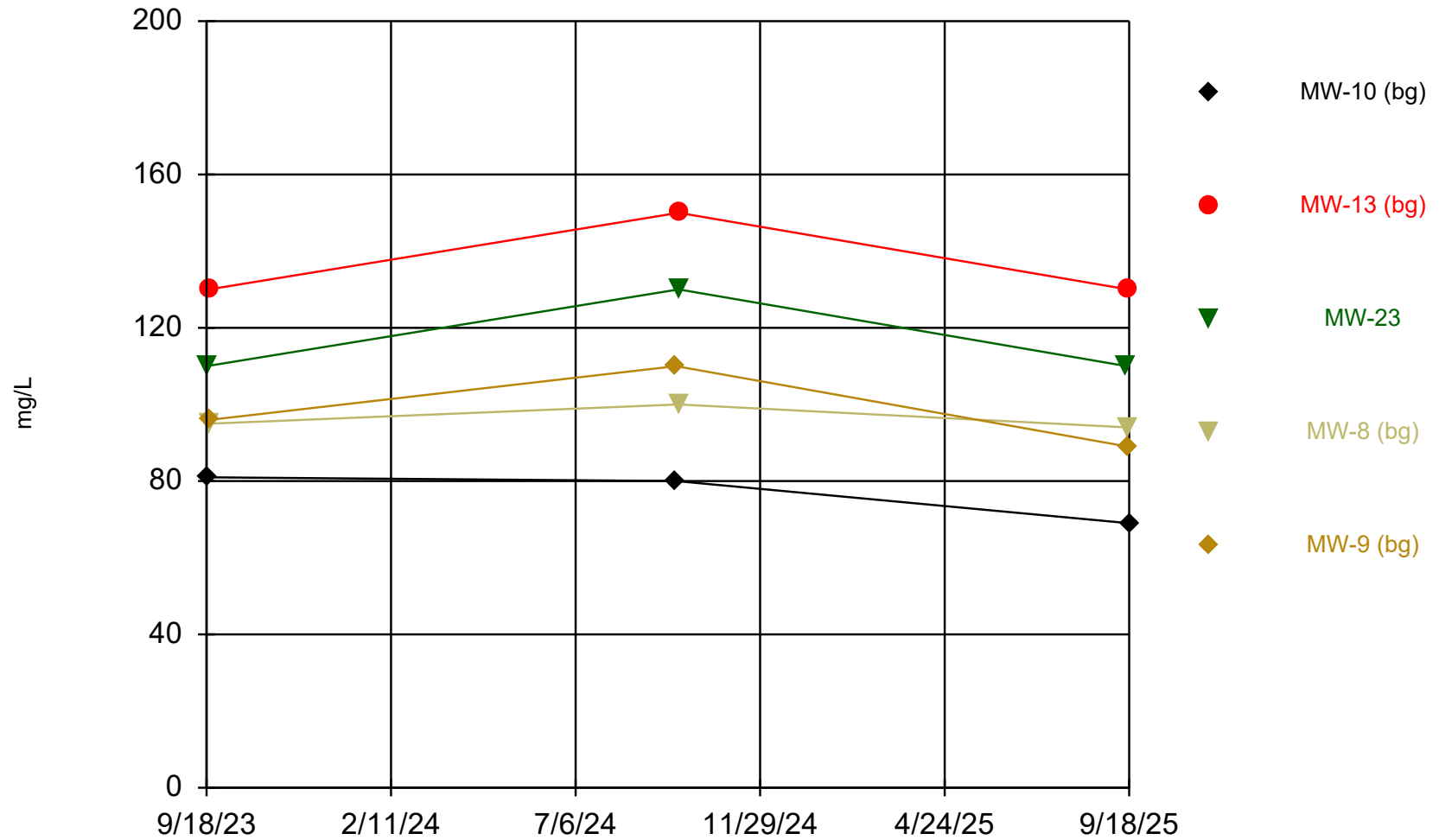
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Boron (ug/L) Analysis Run 3/9/2026 3:49 PM
 Marshelltown E and W Closed LFs Client: SCS Engineers Data: Marshelltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		50.2 (J)			<50
9/26/2016				<50	
9/27/2016	<50				
9/28/2016			70.1 (J)		
9/13/2017		48.6 (J)	47 (J)	37.6 (J)	
9/14/2017					17.2 (J)
9/15/2017	14.1 (J)				
9/11/2018		41.4 (J)	42.9 (J)		
9/12/2018	<12.5			<12.5	<12.5
9/16/2019		130 (J)	<110		
9/17/2019	<110			160 (J)	<110
9/1/2020			140	<80	<80
9/2/2020		88 (J)			
4/29/2021	<58				
9/27/2021		110	110		
9/28/2021	74 (J)				77 (J)
9/20/2022	<58			76 (J)	<58
9/21/2022		94 (J)	92 (J)		
9/18/2023	<76 (U)		89 (J)		
9/20/2023		120			
9/21/2023				81 (J)	<76 (U)
9/24/2024	<76				<76
9/26/2024		85 (J)	110	<76	
9/16/2025			110		
9/17/2025		110		<82 (U)	<82 (U)
9/18/2025	<82 (U)				

Calcium



Time Series Analysis Run 3/9/2026 3:46 PM

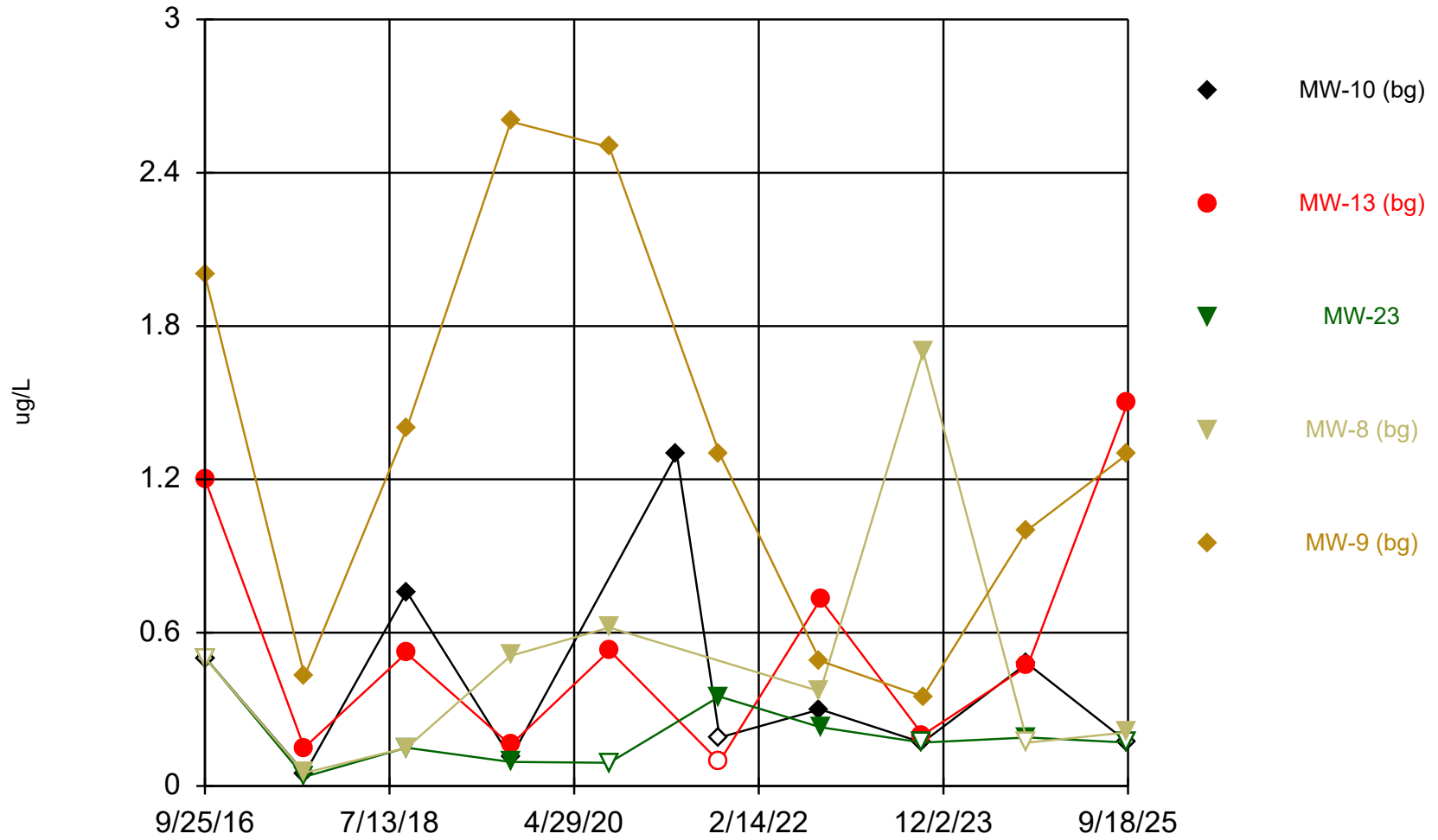
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Calcium (mg/L) Analysis Run 3/9/2026 3:49 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/18/2023	81		110		
9/20/2023		130			
9/21/2023				95	96
9/24/2024	80				110
9/26/2024		150	130	100	
9/16/2025			110		
9/17/2025		130		94	89
9/18/2025	69				

Cobalt



Time Series Analysis Run 3/9/2026 3:46 PM

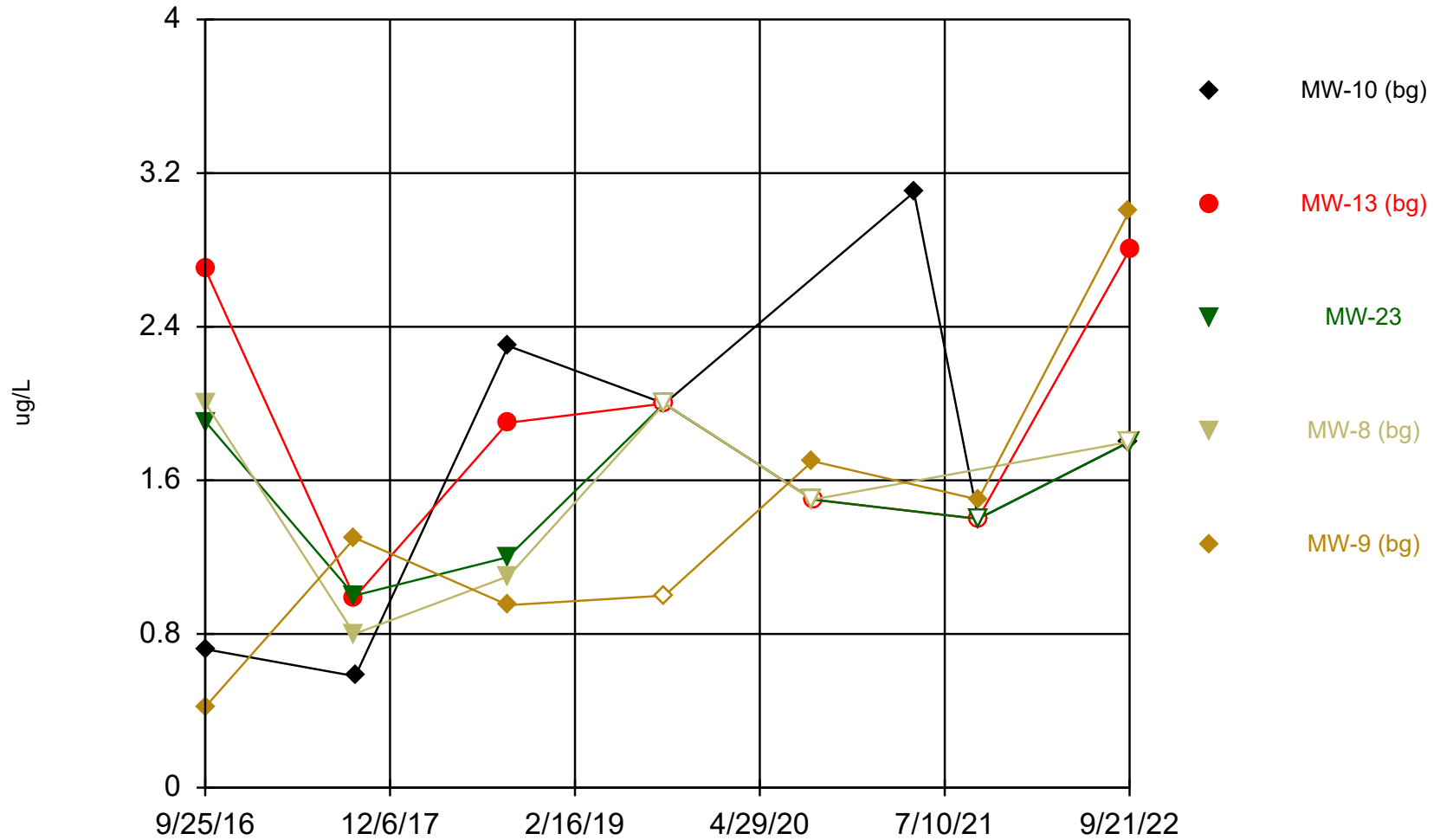
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Cobalt (ug/L) Analysis Run 3/9/2026 3:49 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		1.2			2
9/26/2016				<0.5	
9/27/2016	<0.5				
9/28/2016			<0.5		
9/13/2017		0.15 (J)	0.036 (J)	0.051 (J)	
9/14/2017					0.43 (J)
9/15/2017	0.05 (J)				
9/11/2018		0.52 (J)	<0.15		
9/12/2018	0.76 (J)			0.15 (J)	1.4
9/16/2019		0.16 (J)	0.094 (J)		
9/17/2019	0.11 (J)			0.51	2.6
9/1/2020			<0.091	0.62	2.5
9/2/2020		0.53			
4/29/2021	1.3				
9/27/2021		<0.19	0.35 (J)		
9/28/2021	<0.19				1.3
9/20/2022	0.3 (J)			0.37 (J)	0.49 (J)
9/21/2022		0.73	0.23 (J)		
9/18/2023	<0.17 (U)		<0.17 (U)		
9/20/2023		0.2 (J)			
9/21/2023				1.7	0.35 (J)
9/24/2024	0.48 (J)				1
9/26/2024		0.47 (J)	0.19 (J)	<0.17	
9/16/2025			<0.17 (U)		
9/17/2025		1.5		0.21 (J)	1.3
9/18/2025	<0.17 (U)				

Copper



Time Series Analysis Run 3/9/2026 3:46 PM

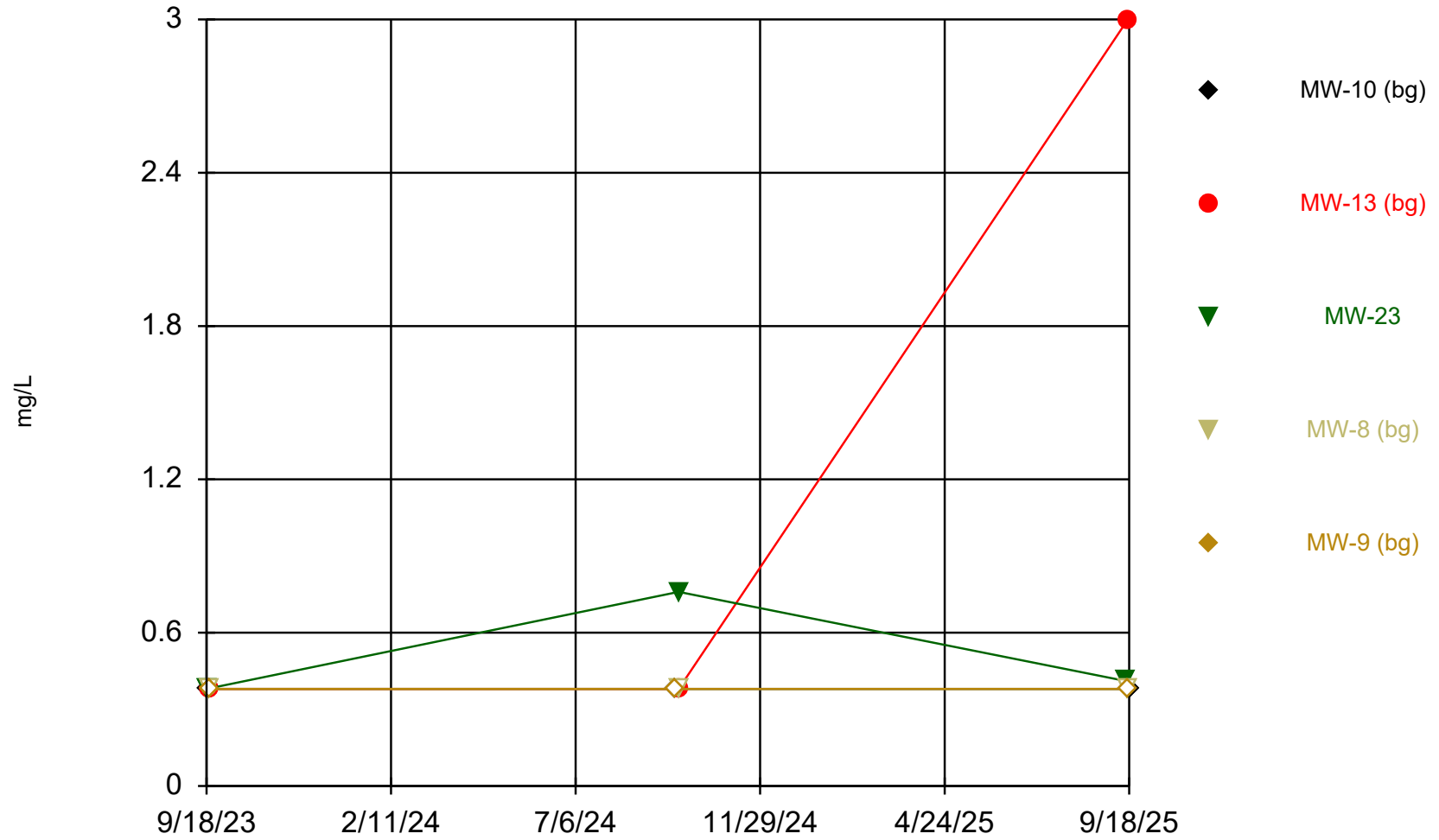
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Copper (ug/L) Analysis Run 3/9/2026 3:49 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		2.7			0.42 (J)
9/26/2016				2	
9/27/2016	0.72 (J)				
9/28/2016			1.9		
9/13/2017		0.99 (J)	1	0.8 (J)	
9/14/2017					1.3
9/15/2017	0.58 (J)				
9/11/2018		1.9	1.2		
9/12/2018	2.3			1.1	0.95 (J)
9/16/2019		<2	2 (J)		
9/17/2019	<2			<2	<2
9/1/2020			<1.5	<1.5	1.7 (J)
9/2/2020		<1.5			
4/29/2021	3.1 (J)				
9/27/2021		<1.4	<1.4		
9/28/2021	<1.4				1.5 (J)
9/20/2022	<1.8			<1.8	3 (J)
9/21/2022		2.8 (J)	<1.8		

Fluoride



Time Series Analysis Run 3/9/2026 3:47 PM

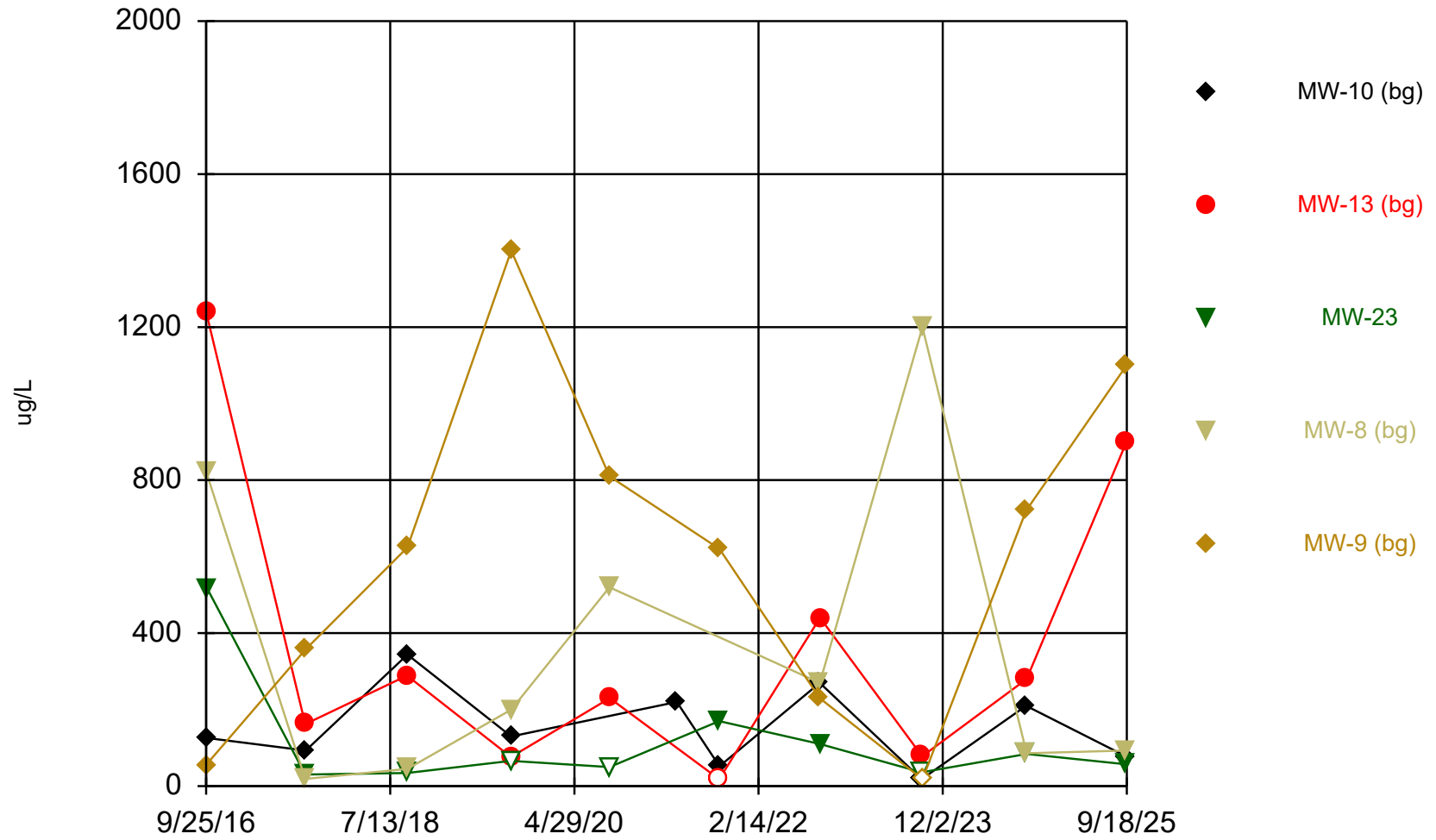
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Fluoride (mg/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/18/2023	<0.38 (U)		<0.38 (U)		
9/20/2023		<0.38 (U)			
9/21/2023				<0.38 (U)	<0.38 (U)
9/24/2024	<0.38				<0.38
9/26/2024		0.38 (J)	0.76 (J)	<0.38	
9/16/2025			0.41 (J)		
9/17/2025		3		<0.38 (U)	<0.38 (U)
9/18/2025	<0.38 (U)				

Iron



Time Series Analysis Run 3/9/2026 3:47 PM

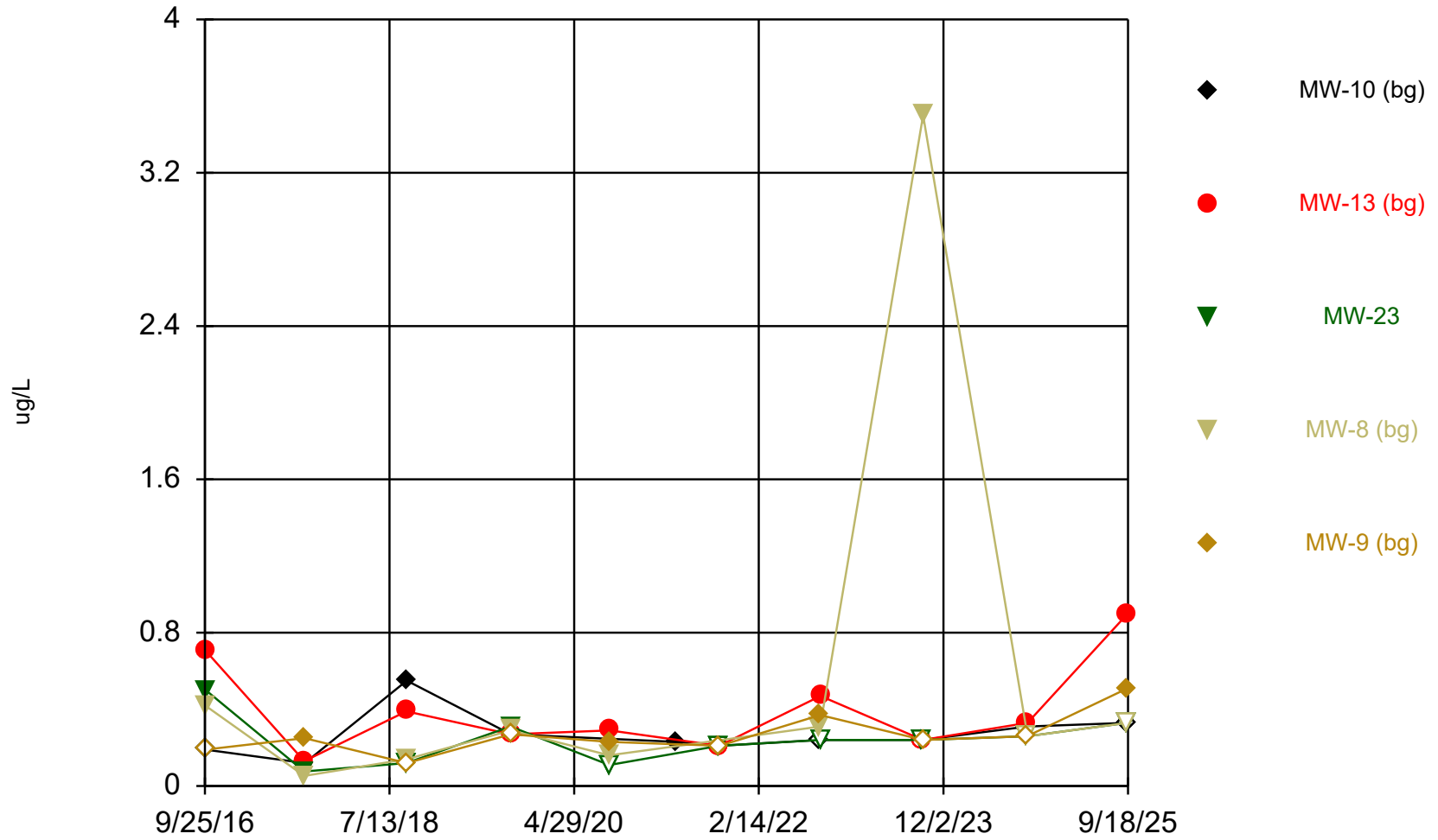
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Iron (ug/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		1240			55.7
9/26/2016				820	
9/27/2016	126				
9/28/2016			518		
9/13/2017		162	30.3 (J)	18.7 (J)	
9/14/2017					357
9/15/2017	93.1				
9/11/2018		289	34.3 (J)		
9/12/2018	344			45.2 (J)	624
9/16/2019		76 (J)	<66		
9/17/2019	130			200	1400
9/1/2020			<50	520	810
9/2/2020		230			
4/29/2021	220				
9/27/2021		<36	170		
9/28/2021	52 (J)				620
9/20/2022	270			270	230
9/21/2022		440	110		
9/18/2023	<36 (U)		<36 (U)		
9/20/2023		78 (J)			
9/21/2023				1200	<36 (U)
9/24/2024	210				720
9/26/2024		280	84 (J)	86 (J)	
9/16/2025			57 (J)		
9/17/2025		900		93 (J)	1100
9/18/2025	77 (J)				

Lead



Time Series Analysis Run 3/9/2026 3:47 PM

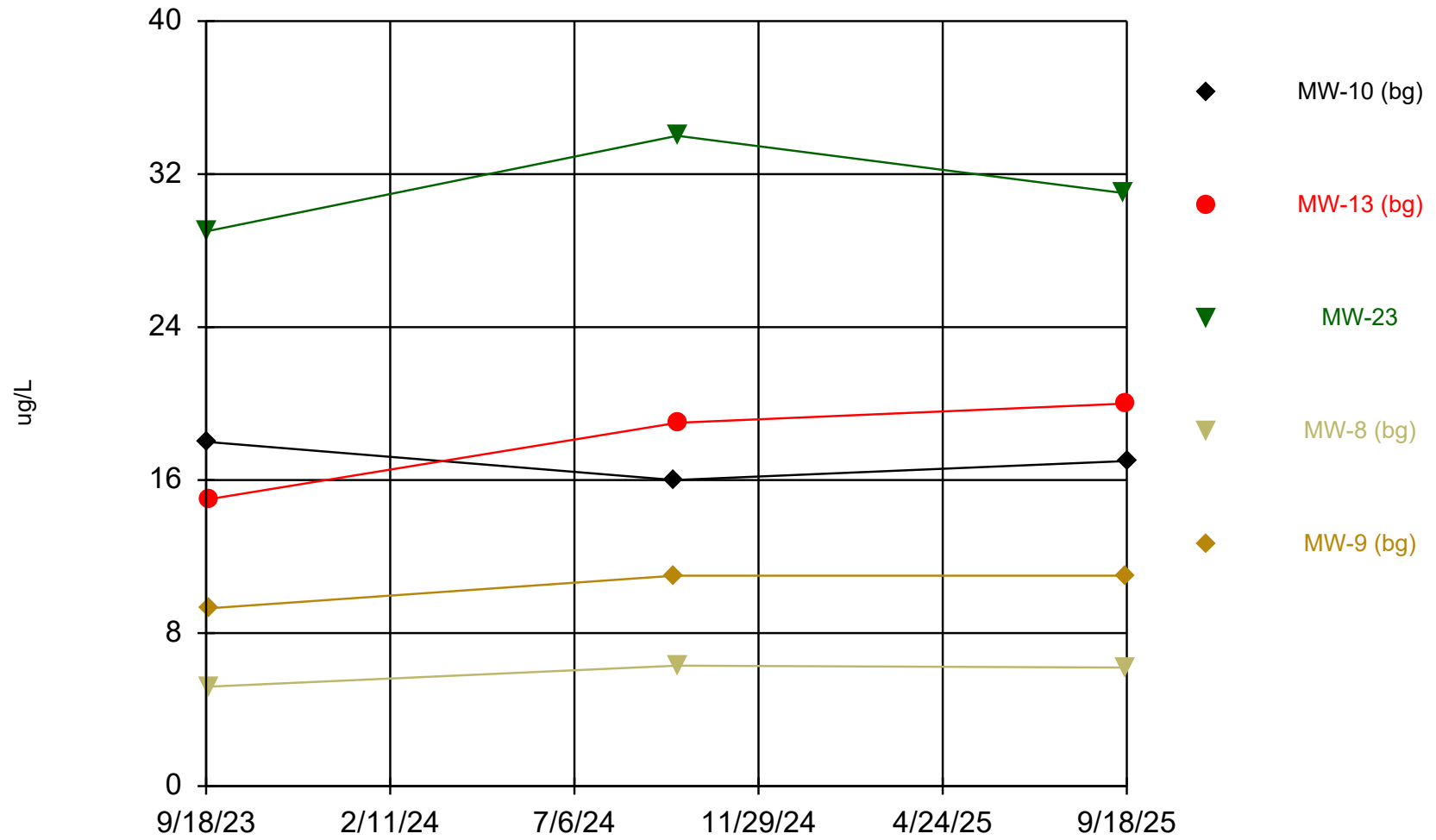
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Lead (ug/L) Analysis Run 3/9/2026 3:50 PM
 Marshelltown E and W Closed LFs Client: SCS Engineers Data: Marshelltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		0.71 (J)			<0.19
9/26/2016				0.42 (J)	
9/27/2016	<0.19				
9/28/2016			0.5 (J)		
9/13/2017		0.13 (J)	0.076 (J)	0.053 (J)	
9/14/2017					0.25 (J)
9/15/2017	0.12 (J)				
9/11/2018		0.39 (J)	<0.12		
9/12/2018	0.55 (J)			0.14 (J)	<0.12
9/16/2019		<0.27	0.31 (J)		
9/17/2019	<0.27			0.29 (J)	<0.27
9/1/2020			<0.11	0.16 (J)	0.23 (J)
9/2/2020		0.29 (J)			
4/29/2021	0.23 (J)				
9/27/2021		<0.21	<0.21		
9/28/2021	<0.21				<0.21
9/20/2022	<0.24			0.31 (J)	0.37 (J)
9/21/2022		0.47 (J)	<0.24		
9/18/2023	<0.24 (U)		<0.24 (U)		
9/20/2023		<0.24 (U)			
9/21/2023				3.5	<0.24 (U)
9/24/2024	0.31 (J)				<0.26
9/26/2024		0.33 (J)	<0.26	<0.26	
9/16/2025			<0.33 (U)		
9/17/2025		0.9		<0.33 (U)	0.51
9/18/2025	<0.33 (U)				

Lithium



Time Series Analysis Run 3/9/2026 3:47 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

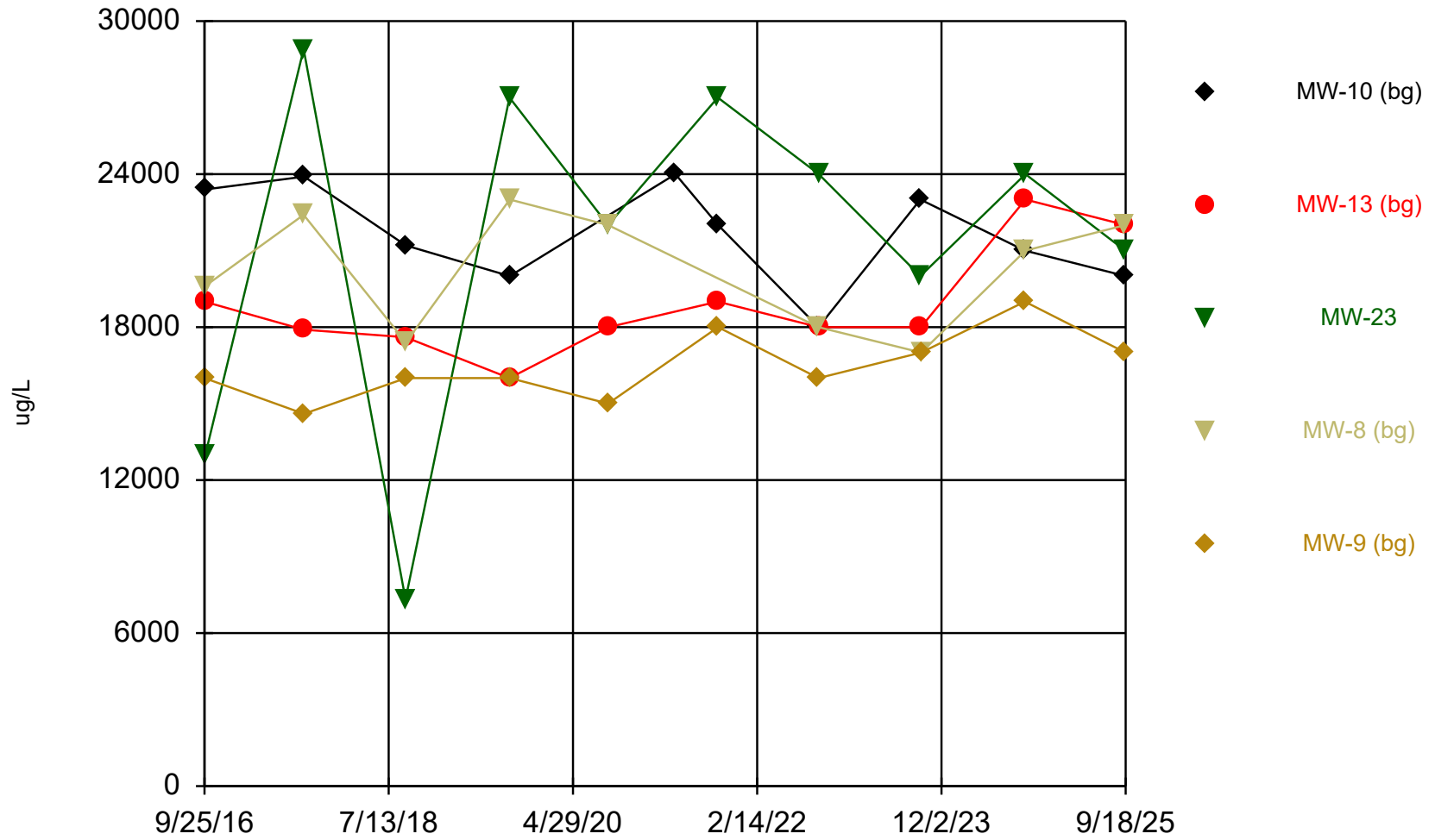
Time Series

Constituent: Lithium (ug/L) Analysis Run 3/9/2026 3:50 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/18/2023	18		29		
9/20/2023		15			
9/21/2023				5.2 (J)	9.3 (J)
9/24/2024	16				11
9/26/2024		19	34	6.3 (J)	
9/16/2025			31		
9/17/2025		20		6.2 (J)	11
9/18/2025	17				

Magnesium



Time Series Analysis Run 3/9/2026 3:47 PM

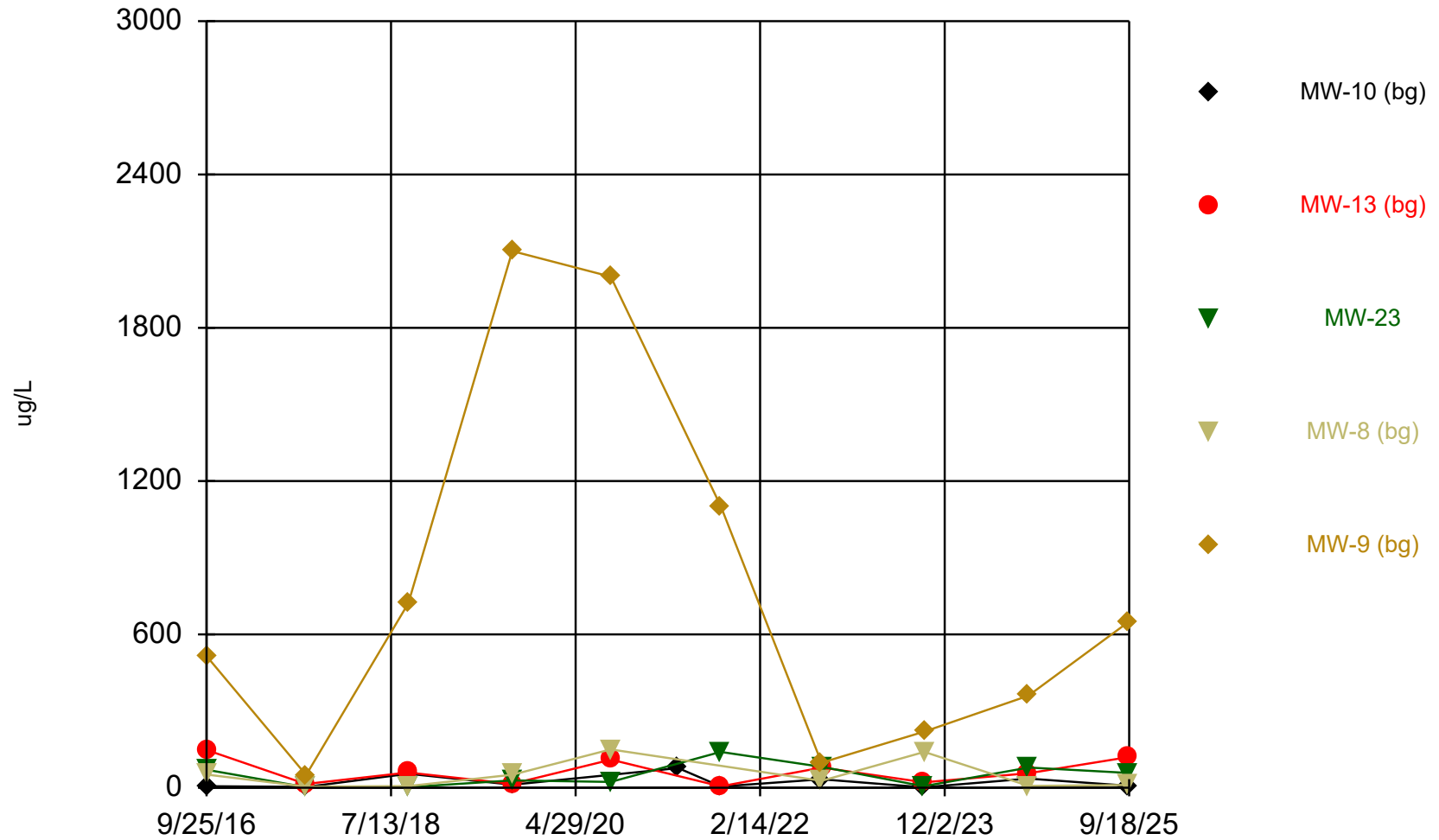
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Magnesium (ug/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		19000			16000
9/26/2016				19600	
9/27/2016	23400				
9/28/2016			13000		
9/13/2017		17900	28900	22400	
9/14/2017					14600
9/15/2017	23900				
9/11/2018		17600	7320		
9/12/2018	21200			17400	16000
9/16/2019		16000	27000		
9/17/2019	20000			23000	16000
9/1/2020			22000	22000	15000
9/2/2020		18000			
4/29/2021	24000				
9/27/2021		19000	27000		
9/28/2021	22000				18000
9/20/2022	18000			18000	16000
9/21/2022		18000	24000		
9/18/2023	23000		20000		
9/20/2023		18000			
9/21/2023				17000	17000
9/24/2024	21000				19000
9/26/2024		23000	24000	21000	
9/16/2025			21000		
9/17/2025		22000		22000	17000
9/18/2025	20000				

Manganese



Time Series Analysis Run 3/9/2026 3:47 PM

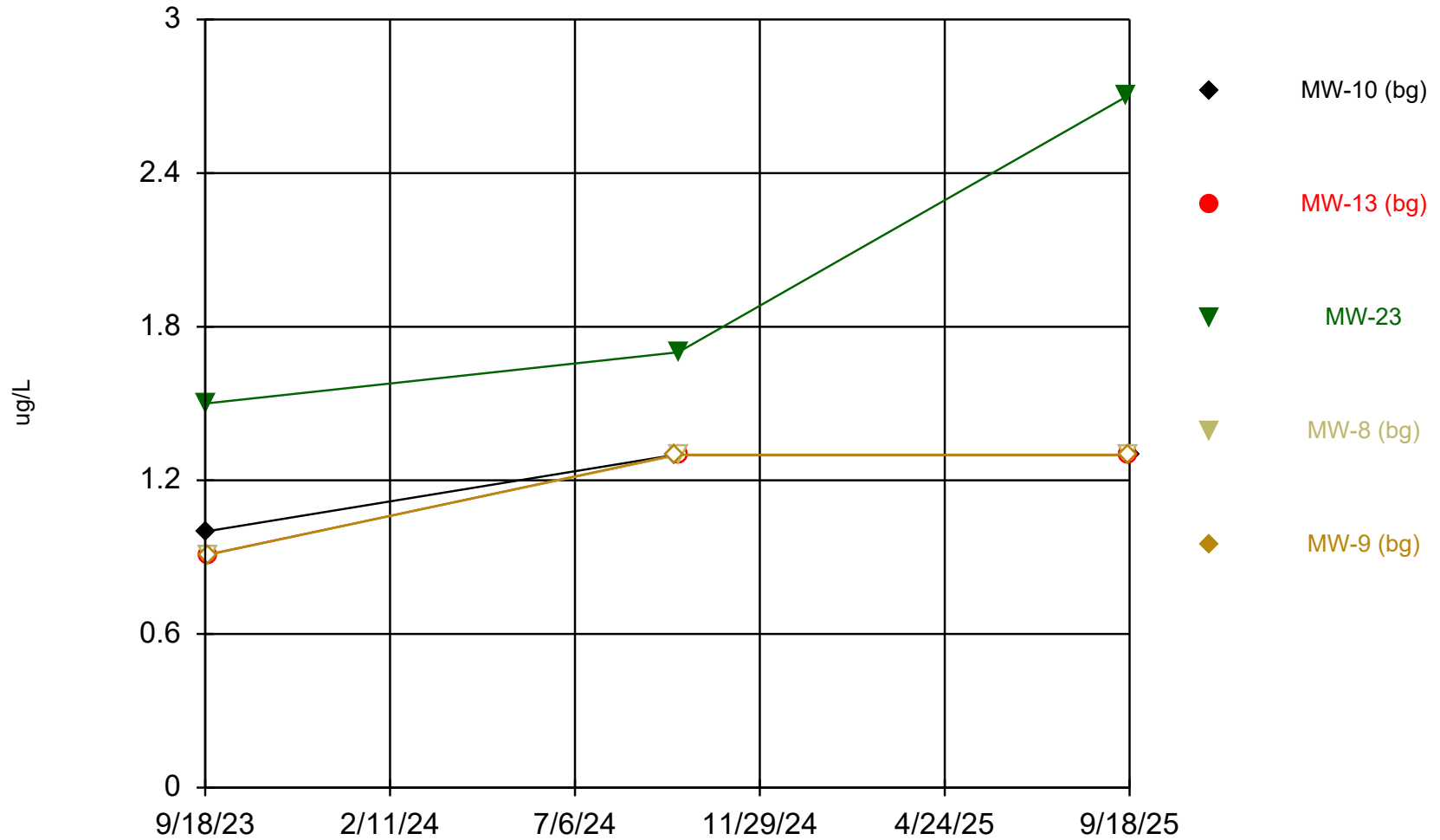
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Manganese (ug/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		148			515
9/26/2016				51.6	
9/27/2016	6.1				
9/28/2016			70		
9/13/2017		14.6	2.2	4.3	
9/14/2017					49.8
9/15/2017	3.2				
9/11/2018		59.8	2		
9/12/2018	54.9			6.6	722
9/16/2019		15	29		
9/17/2019	12			51	2100
9/1/2020			23	150	2000
9/2/2020		110			
4/29/2021	77				
9/27/2021		5.7 (J)	140		
9/28/2021	4.9 (J)				1100
9/20/2022	33			27	98
9/21/2022		79	82		
9/18/2023	<3.6 (U)		5.8 (J)		
9/20/2023		21			
9/21/2023				140	220
9/24/2024	36				360
9/26/2024		57	79	7 (J)	
9/16/2025			58		
9/17/2025		120		11	650
9/18/2025	7.6 (J)				

Molybdenum



Time Series Analysis Run 3/9/2026 3:47 PM

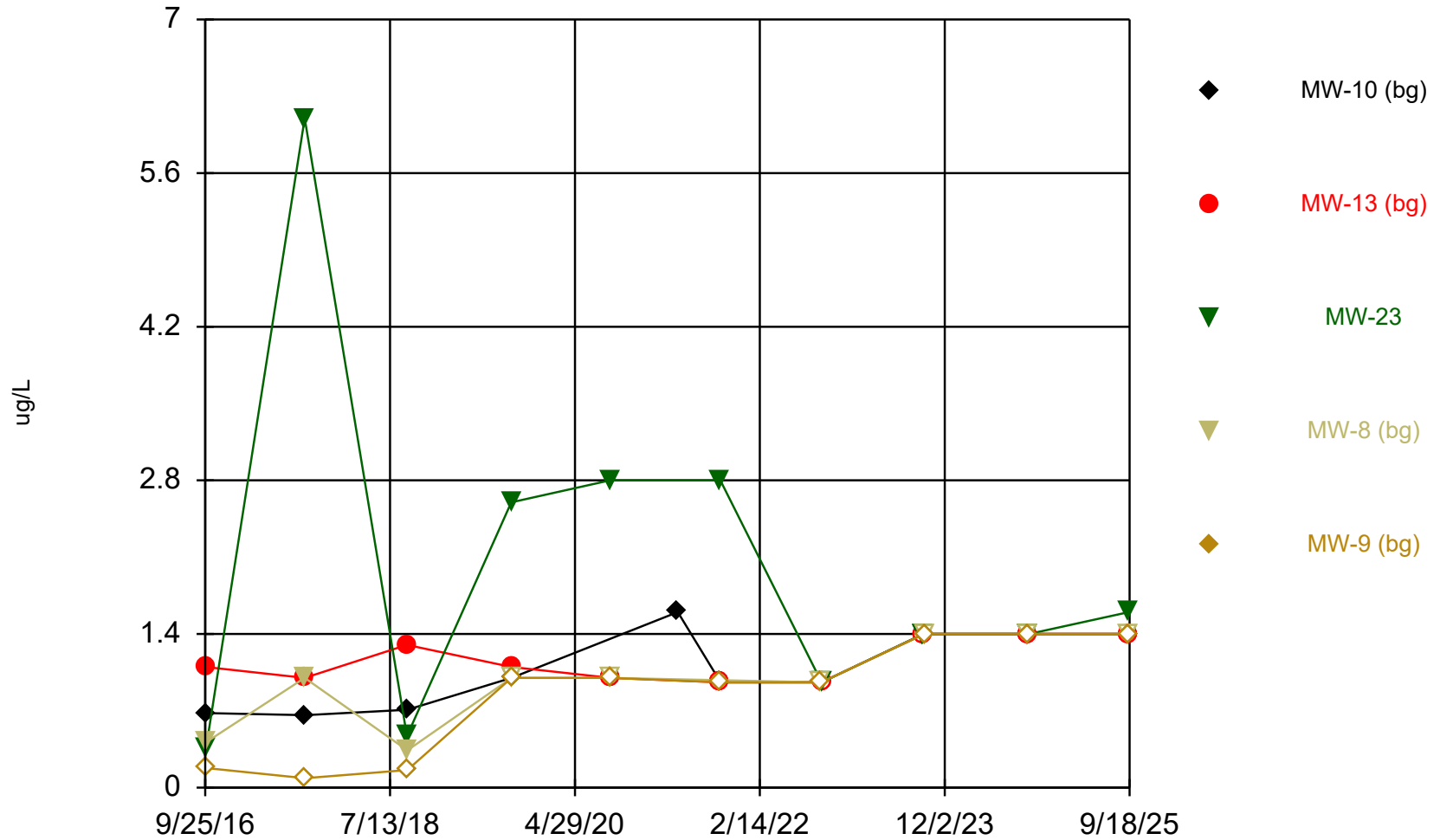
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Molybdenum (ug/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/18/2023	1 (J)		1.5 (J)		
9/20/2023		<0.91 (U)			
9/21/2023				<0.91 (U)	<0.91 (U)
9/24/2024	<1.3				<1.3
9/26/2024		<1.3	1.7 (J)	<1.3	
9/16/2025			2.7		
9/17/2025		<1.3 (U)		<1.3 (U)	<1.3 (U)
9/18/2025	<1.3 (U)				

Selenium



Time Series Analysis Run 3/9/2026 3:47 PM

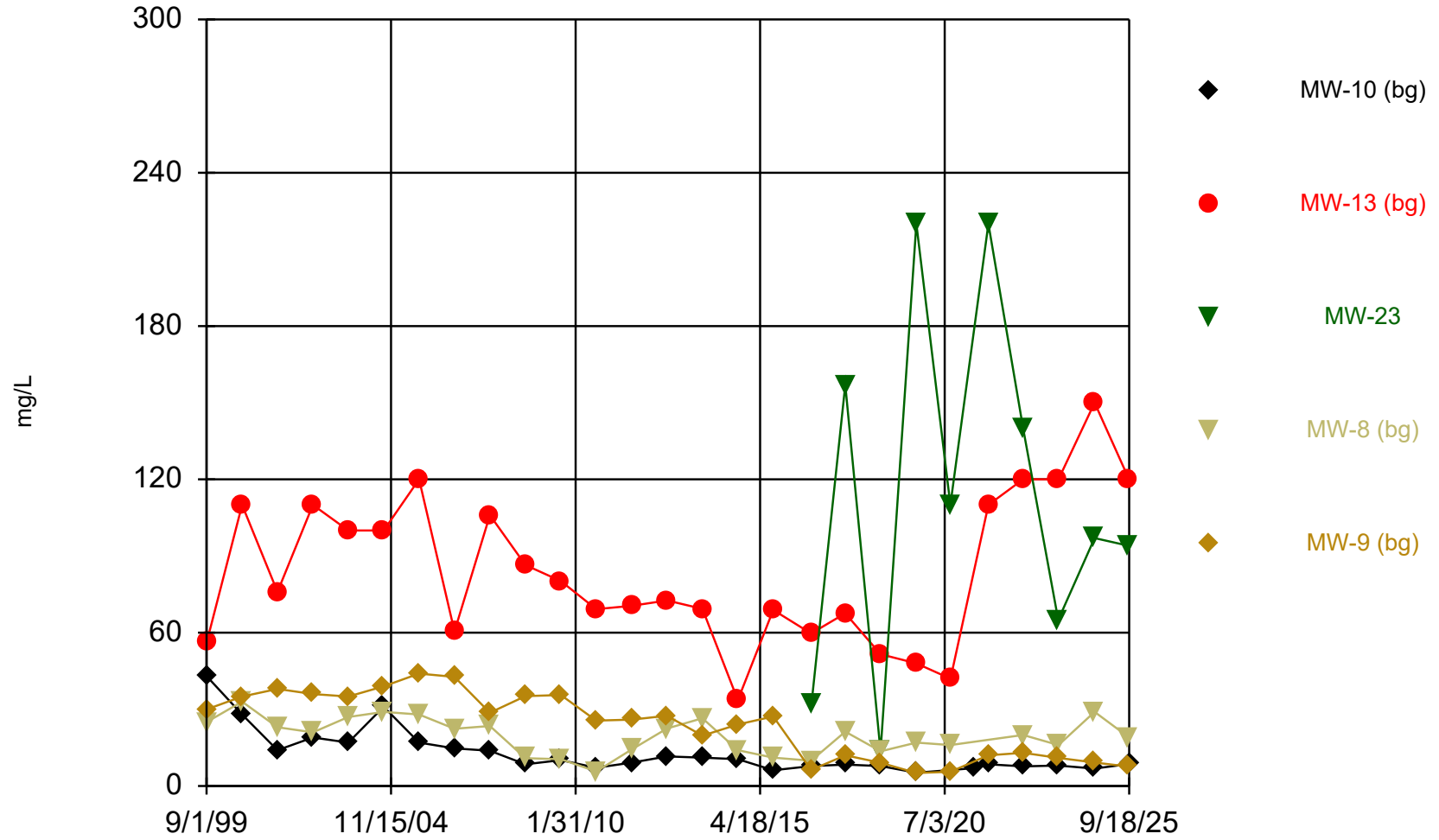
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Selenium (ug/L) Analysis Run 3/9/2026 3:50 PM
 Marshelltown E and W Closed LFs Client: SCS Engineers Data: Marshelltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		1.1			<0.18
9/26/2016				0.41 (J)	
9/27/2016	0.68 (J)				
9/28/2016			0.36 (J)		
9/13/2017		1	6.1	1	
9/14/2017					<0.086
9/15/2017	0.66 (J)				
9/11/2018		1.3	0.47 (J)		
9/12/2018	0.71 (J)			0.34 (J)	<0.16
9/16/2019		1.1 (J)	2.6 (J)		
9/17/2019	<1			<1	<1
9/1/2020			2.8 (J)	<1	<1
9/2/2020		<1			
4/29/2021	1.6 (J)				
9/27/2021		<0.96	2.8 (J)		
9/28/2021	<0.96				<0.96
9/20/2022	<0.96			<0.96	<0.96
9/21/2022		<0.96	<0.96		
9/18/2023	<1.4 (U)		<1.4 (U)		
9/20/2023		<1.4 (U)			
9/21/2023				<1.4 (U)	<1.4 (U)
9/24/2024	<1.4				<1.4
9/26/2024		<1.4	<1.4	<1.4	
9/16/2025			1.6 (J)		
9/17/2025		<1.4 (U)		<1.4 (U)	<1.4 (U)
9/18/2025	<1.4 (U)				

Sulfate



Time Series Analysis Run 3/9/2026 3:48 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

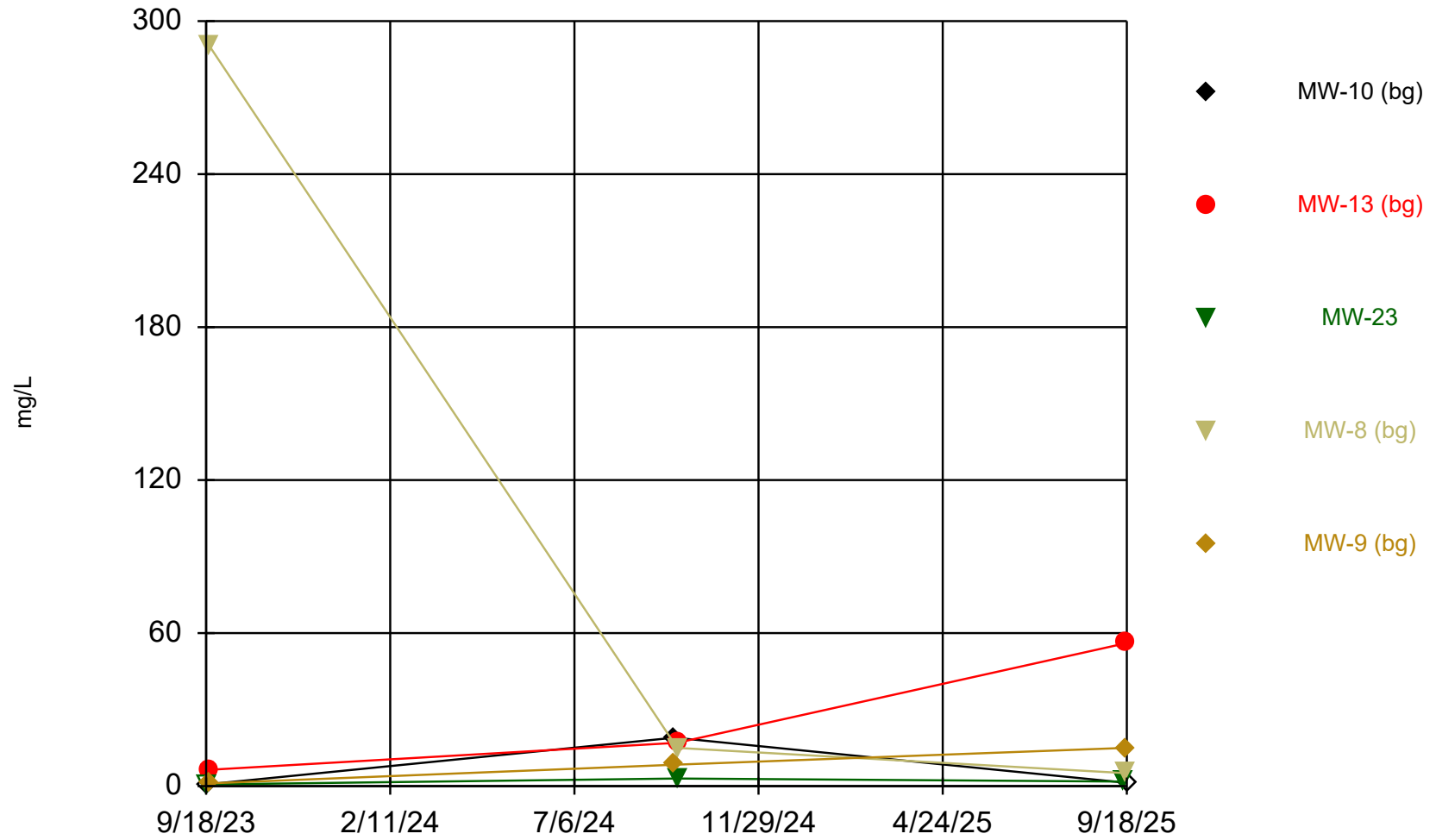
Time Series

Constituent: Sulfate (mg/L) Analysis Run 3/9/2026 3:50 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/1/1999	43	56		25	30
9/1/2000	28	110		33	35
9/1/2001	14	76		23	38
9/1/2002	19	110		21	36
9/1/2003	17	100		27	35
9/1/2004	31	100		29	39
9/1/2005	17	120		28	44
9/1/2006	14.7	60.5		22.4	42.7
9/1/2007	13.8	106		23.5	28.7
9/1/2008	8.48	86.5		10.9	35.2
9/1/2009	10.1	80.2		10.5	35.6
9/1/2010	7.17	69.2		5.7	25.6
9/1/2011	9.16	70.5		14.3	26
9/1/2012	11.6	72.6		22.5	27.5
9/1/2013	11.1	69.3		26.5	19.7
9/1/2014	10.5	33.6		14	24.1
9/1/2015	6.2	68.9		11.1	27.2
9/25/2016		59.7			6.3
9/26/2016				9.9	
9/27/2016	7.8				
9/28/2016			31.8		
9/13/2017		67.6	157	21.3	
9/14/2017					12
9/15/2017	8.4				
9/11/2018		51.6	13.5		
9/12/2018	7.8			13.6	9.1
9/16/2019		48	220		
9/17/2019	5.2			17	5.1
9/1/2020			110	16	5.6
9/2/2020		42			
4/29/2021	7				
9/27/2021		110	220		
9/28/2021	8.5				12
9/20/2022	7.7			20	13
9/21/2022		120	140		
9/18/2023	8		65		
9/20/2023		120			
9/21/2023				16	11
9/24/2024	6.8				9.2
9/26/2024		150	97	29	
9/16/2025			94		
9/17/2025		120		19	7.6
9/18/2025	8.6				

Total Suspended Solids



Time Series Analysis Run 3/9/2026 3:48 PM

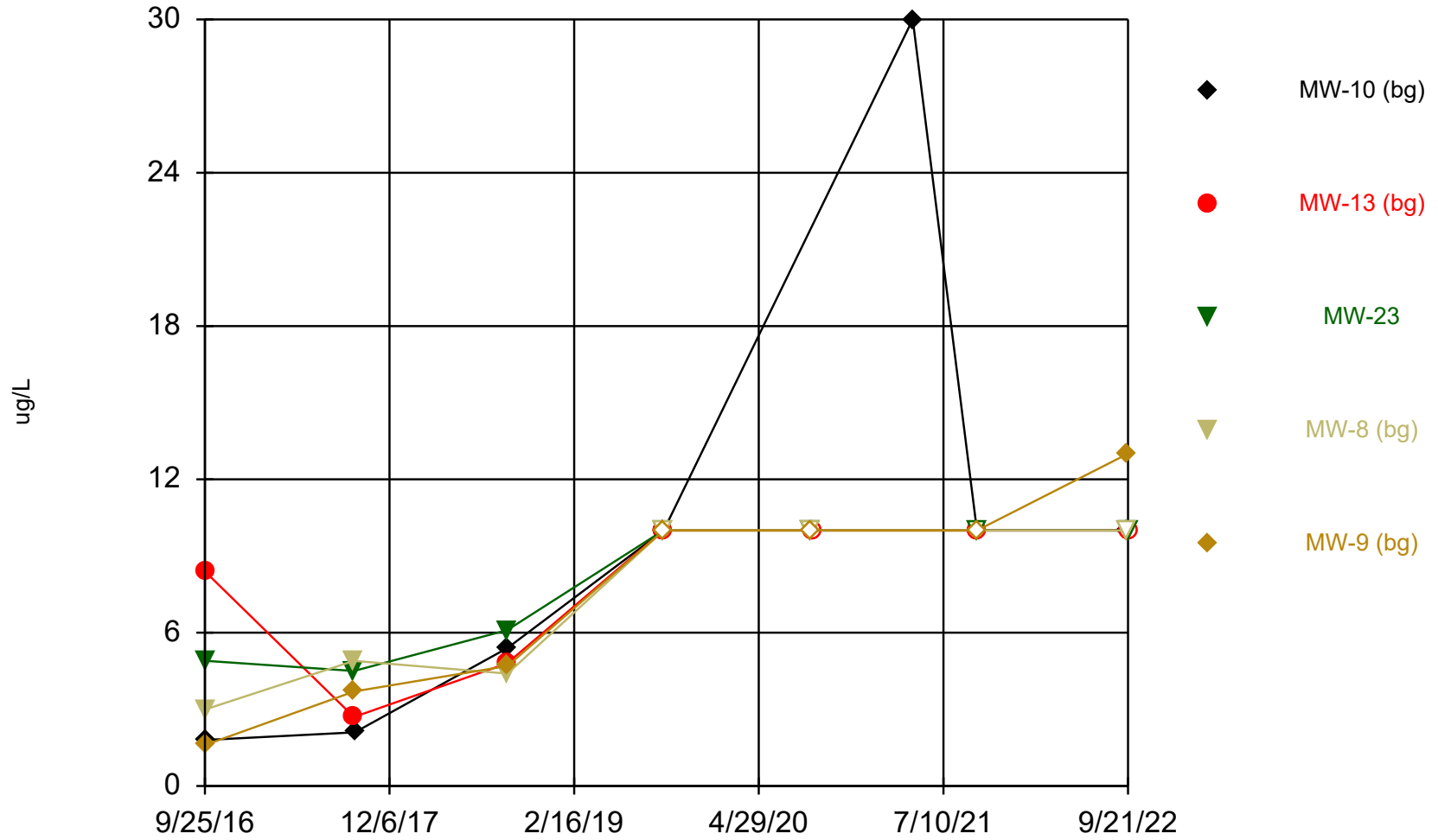
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Total Suspended Solids (mg/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/18/2023	<0.64 (U)		<0.64 (U)		
9/20/2023		6.4			
9/21/2023				290	1.1 (J)
9/24/2024	19				8.4
9/26/2024		17	3	15	
9/16/2025			1.8 (J)		
9/17/2025		56		5.1	15
9/18/2025	<1.3 (U)				

Zinc



Time Series Analysis Run 3/9/2026 3:48 PM

Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

Time Series

Constituent: Zinc (ug/L) Analysis Run 3/9/2026 3:50 PM
Marshalltown E and W Closed LFs Client: SCS Engineers Data: Marshalltown

	MW-10 (bg)	MW-13 (bg)	MW-23	MW-8 (bg)	MW-9 (bg)
9/25/2016		8.4 (J)			1.6 (J)
9/26/2016				3 (J)	
9/27/2016	1.8 (J)				
9/28/2016			4.9 (J)		
9/13/2017		2.7 (J)	4.5 (J)	4.9 (J)	
9/14/2017					3.7 (J)
9/15/2017	2.1 (J)				
9/11/2018		4.8 (J)	6.1 (J)		
9/12/2018	5.4 (J)			4.4 (J)	4.7 (J)
9/16/2019		<10	10 (J)		
9/17/2019	<10			<10	<10
9/1/2020			<10	<10	<10
9/2/2020		<10			
4/29/2021	30				
9/27/2021		<10	<10		
9/28/2021	<10				<10
9/20/2022	<10			<10	13 (J)
9/21/2022		<10	<10		