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Environmental Challenges
BUSINESS SOLUTIONS®

EarthCon Plume Analytics® Services

Former Ducane Facility

Blackville, SC

Prepared for Lennox International

July 23, 2020

46a

Groundwater Plume Analytics® Services

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Groundwater Plume Analytics[®] Services

PCE

TCE

Cis-1,2-DCE

trans-1,2-DCE

1,1-DCE

Vinyl Chloride

Total Chloroethenes

1,1,2-TCA

1,1,1-TCA

1,2-DCA

1,1-DCA

Total Chloroethanes

Deep Fractional Charts

Toluene

Ethylbenzene

Xylene

Geochemical

Groundwater Elevation

Groundwater Plume Analytics[®] Services

DO

ORP

Ferrous Iron

Methane

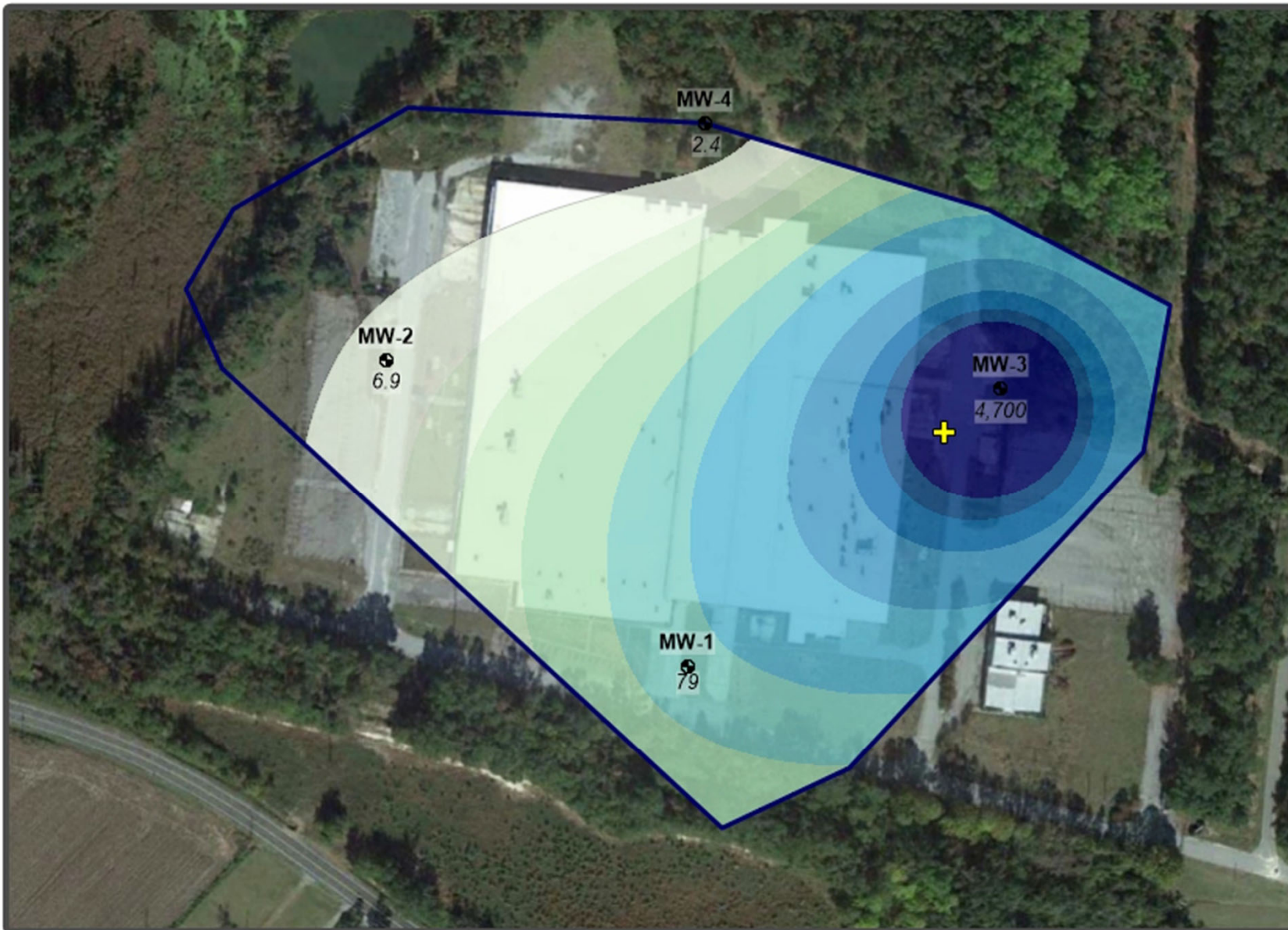
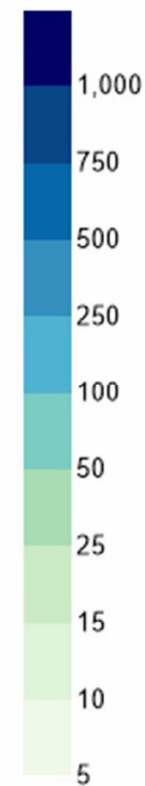
Ethane

Ethene

Total Organic Carbon

**PCE
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



0 ft 215 ft 430 ft

LEGEND

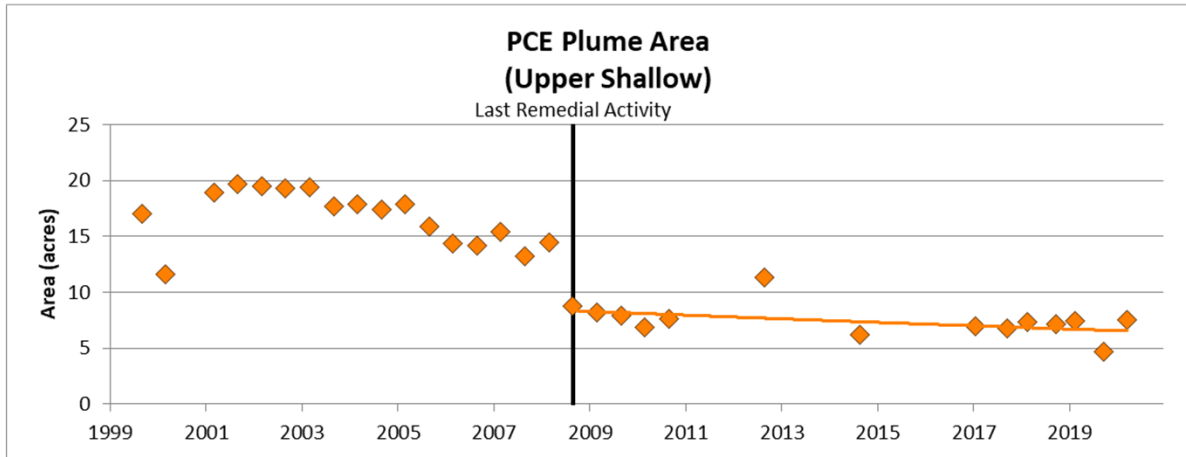
- MW-1 Monitoring Well
- MW-3 Hanging Well
- 112 Concentration ($\mu\text{g/L}$)
- NS (140) Well Not Sampled (Assigned Value Shown)
- Plume Center of Mass

Plume Characteristics

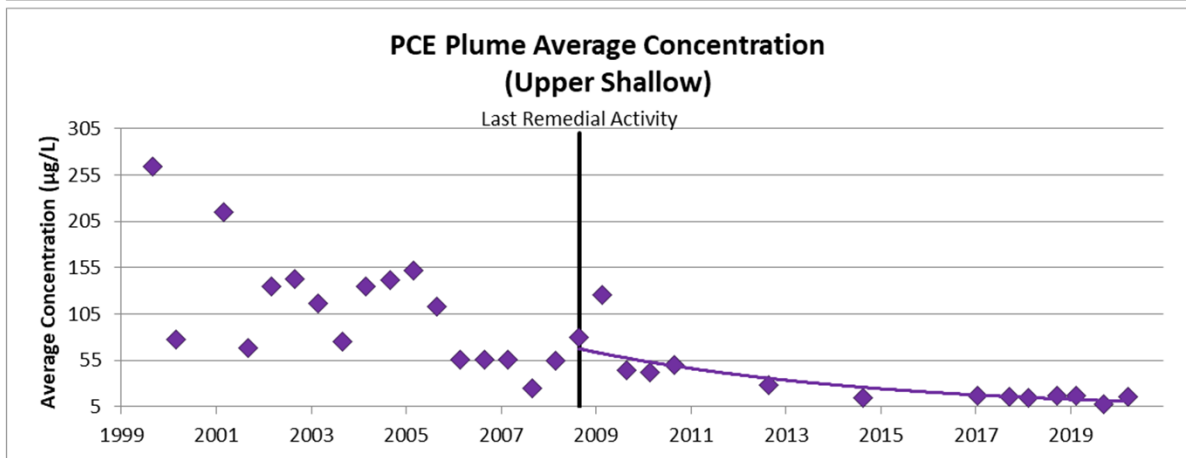
Plume Area: **17.1 acres**
 Plume Average Concentration: **264 $\mu\text{g/L}$**
 Plume Mass Indicator: **36.8 lbs**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

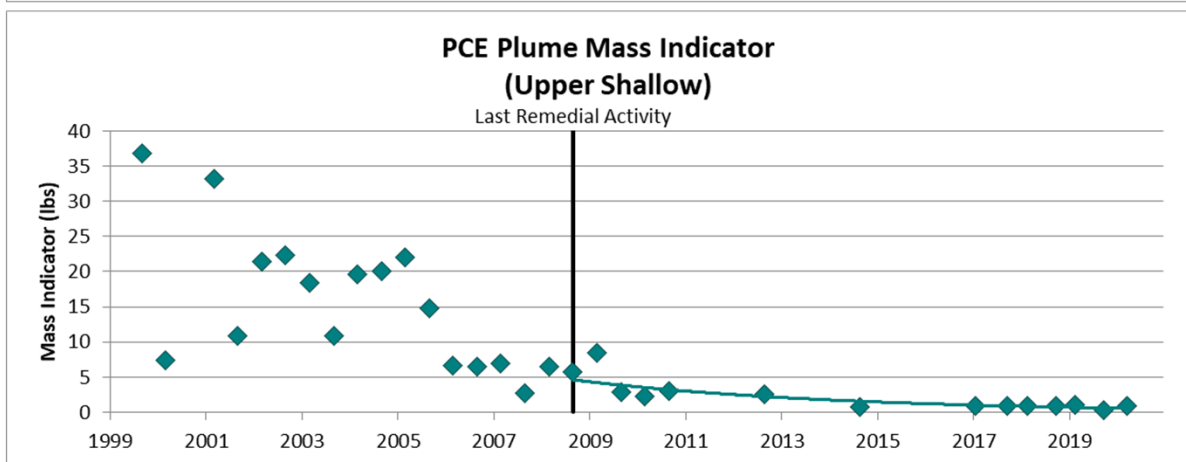




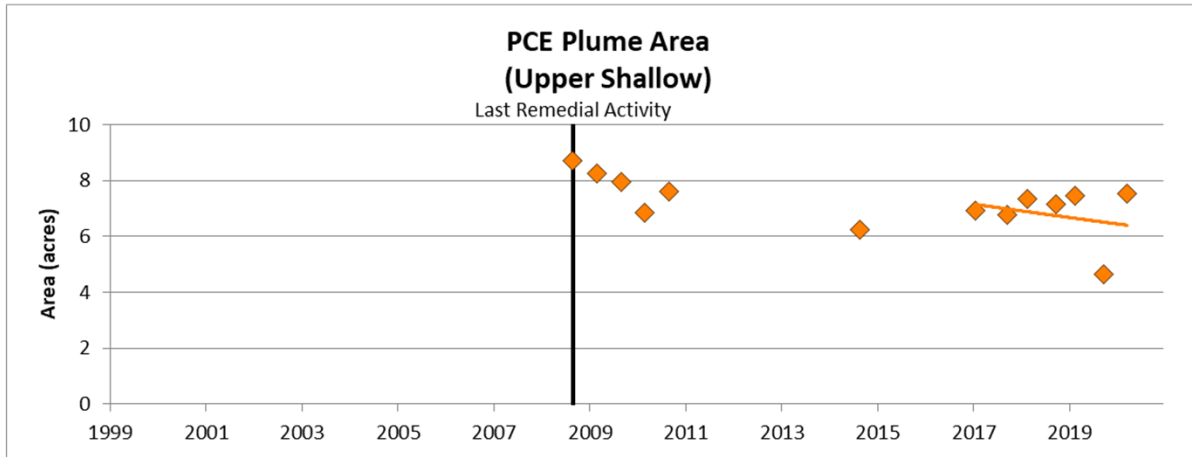
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: 94% Confidence
Regression: 92% Confidence



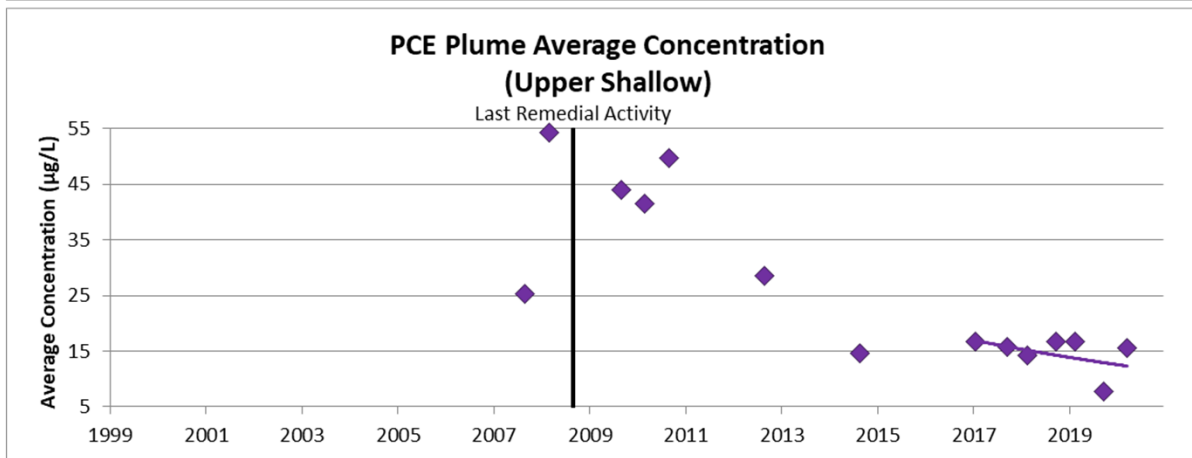
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



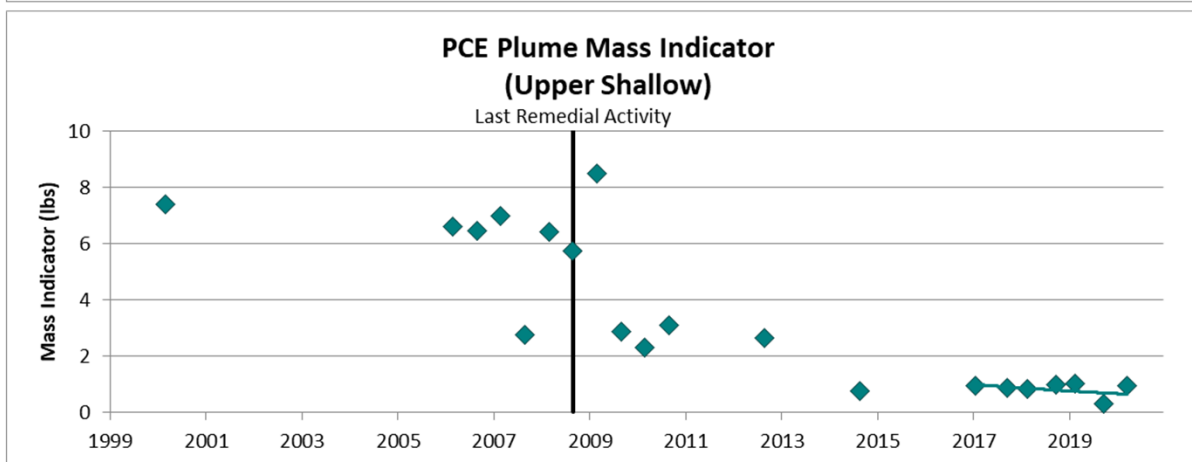
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 81% Confidence
Regression: 38% Confidence



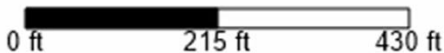
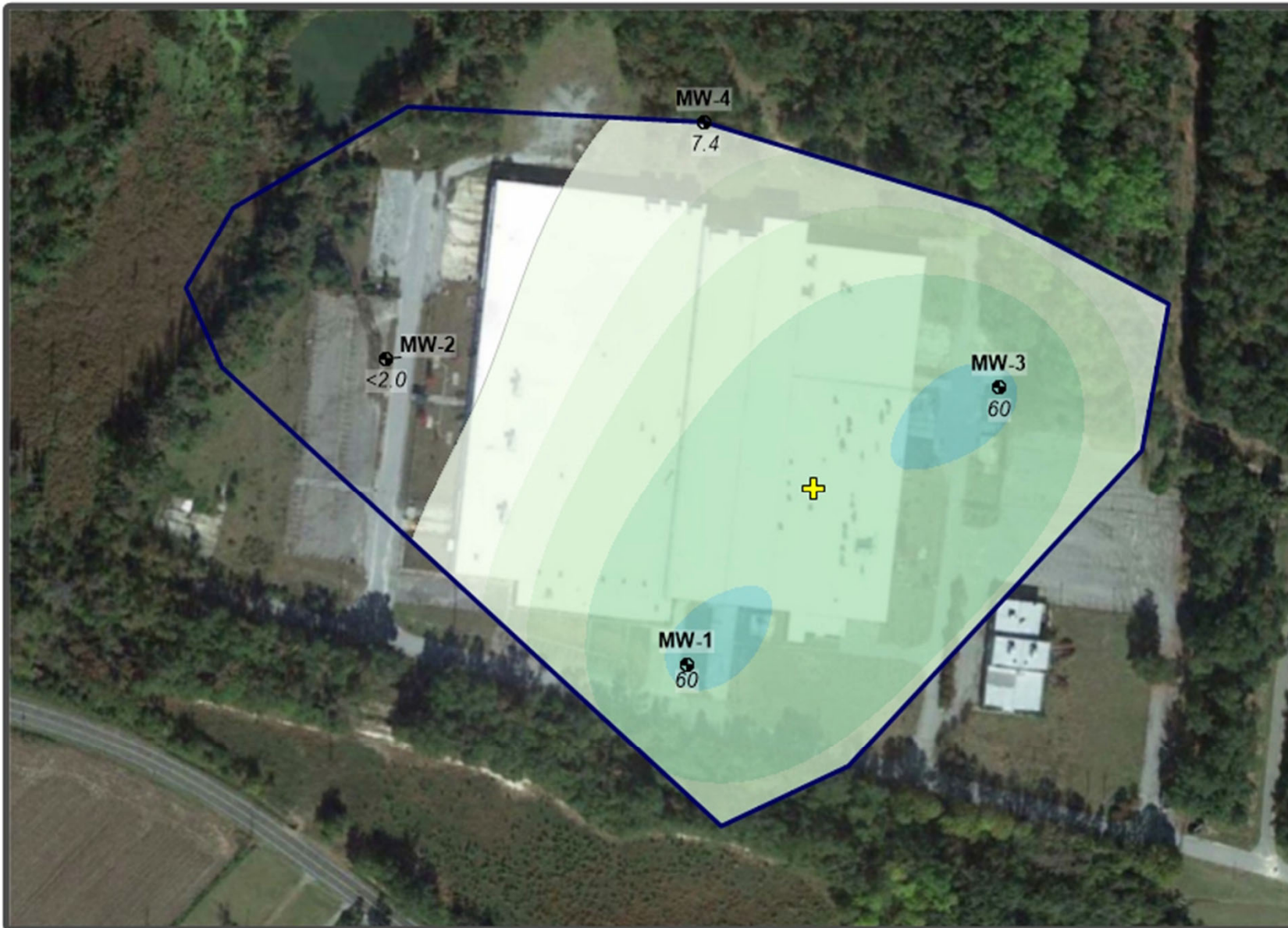
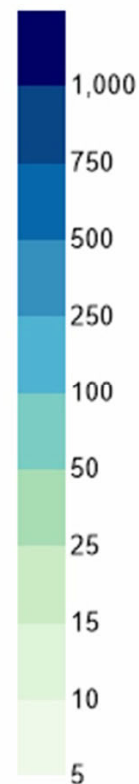
Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 61% Confidence
Regression: 63% Confidence



Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 50% Confidence
Regression: 55% Confidence

**TCE
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



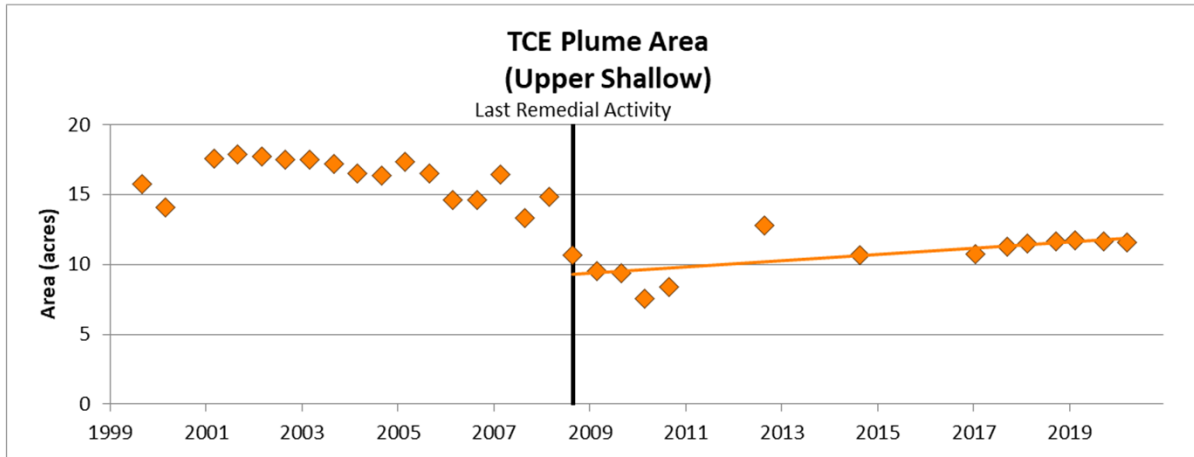
LEGEND	
MW-1	Monitoring Well
MW-9	Hanging Well
112	Concentration ($\mu\text{g/L}$)
NS (14)	Well Not Sampled (Assigned Value Shown)
+	Plume Center of Mass

Plume Characteristics

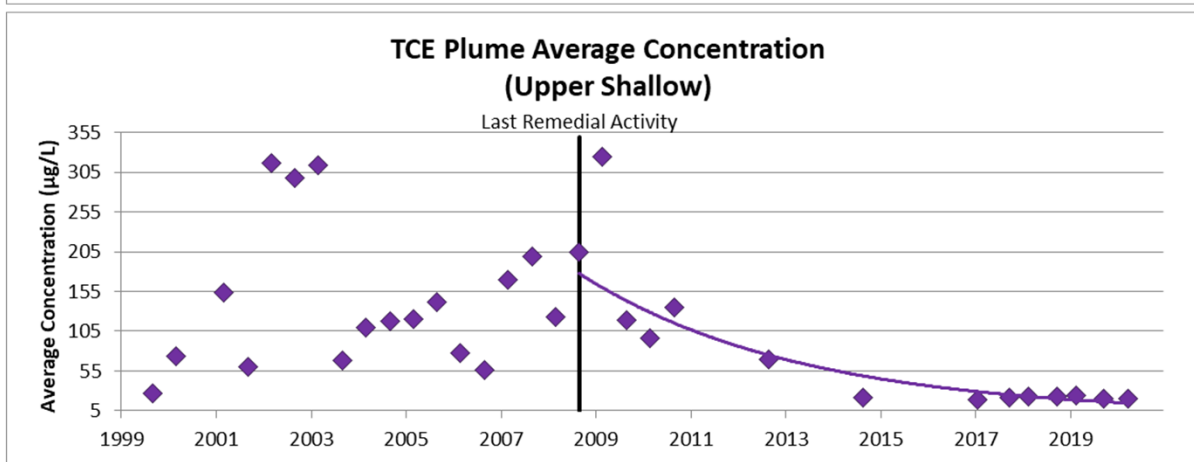
Plume Area: **15.8 acres**
 Plume Average Concentration: **26.6 $\mu\text{g/L}$**
 Plume Mass Indicator: **3.4 lbs**

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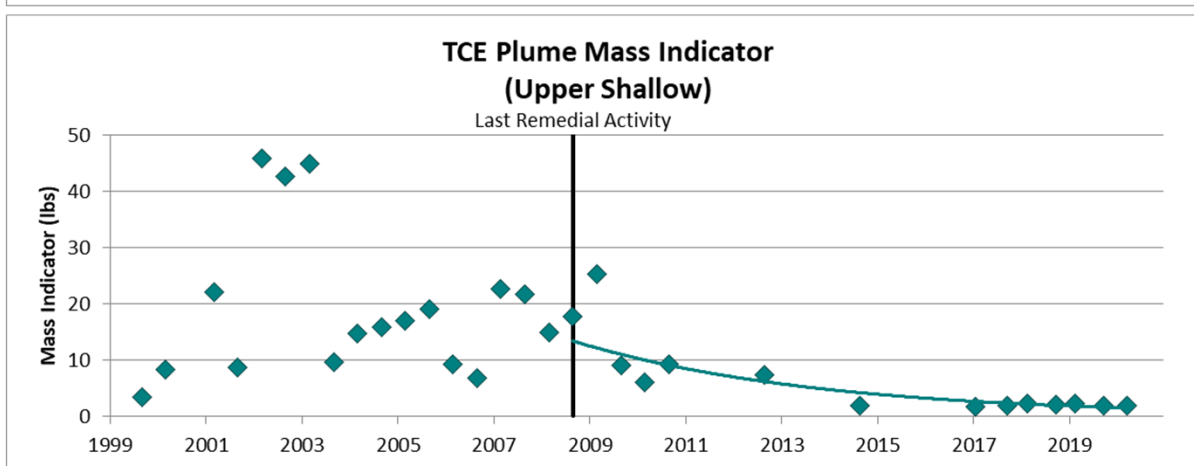




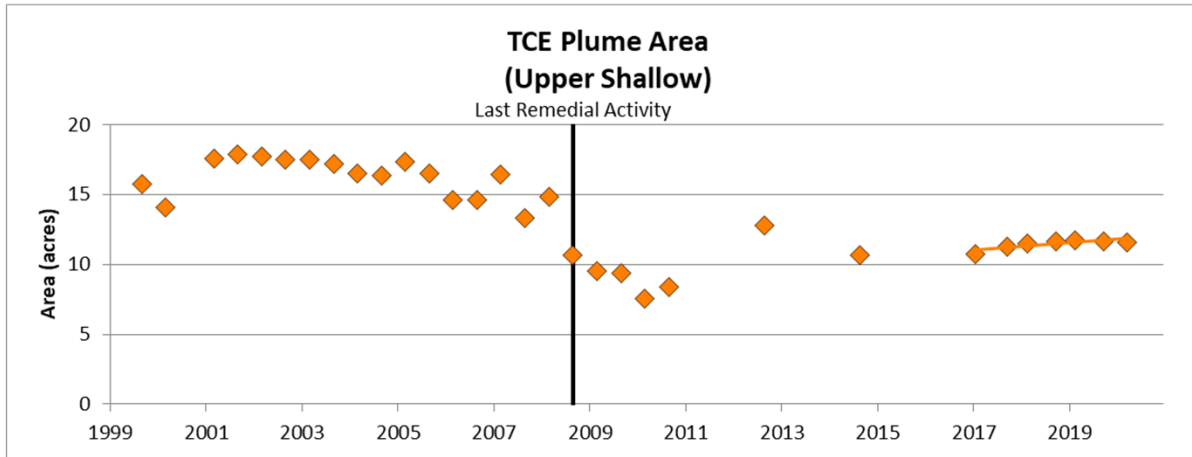
Sep-2008 to Apr-2020
Increasing Trend
Mann-Kendall: >99% Confidence
Regression: 99% Confidence



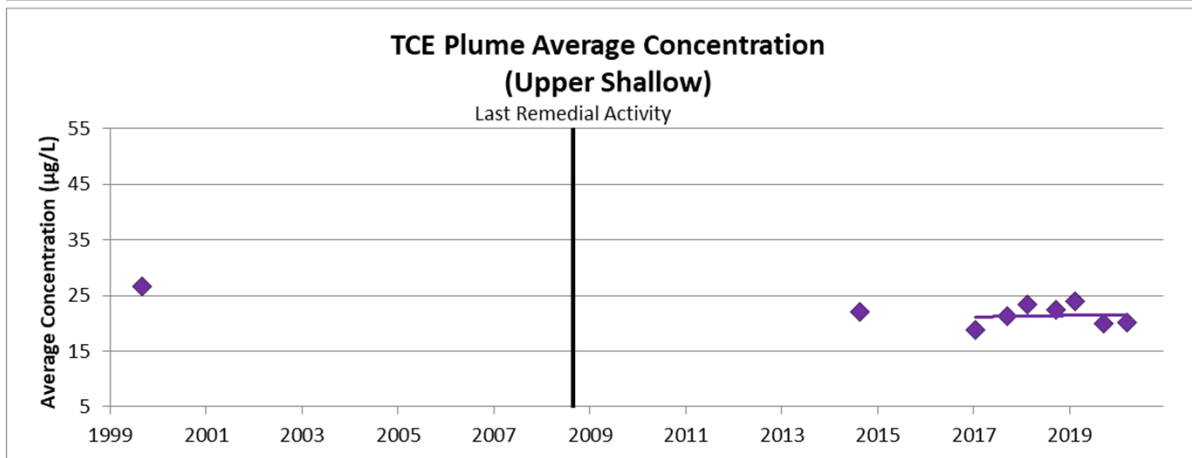
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



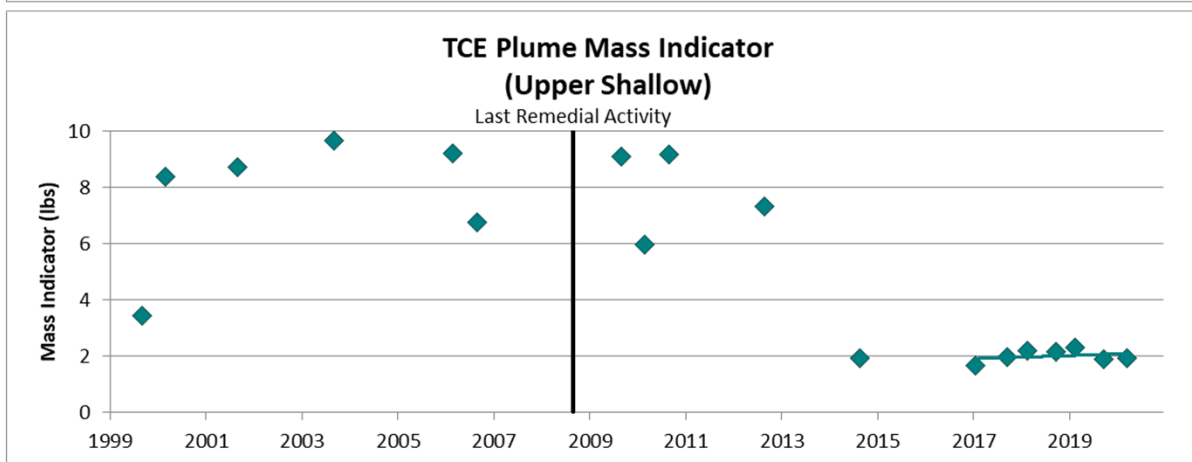
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



Feb-2017 to Apr-2020
Increasing Trend
Mann-Kendall: 97% Confidence
Regression: 97% Confidence

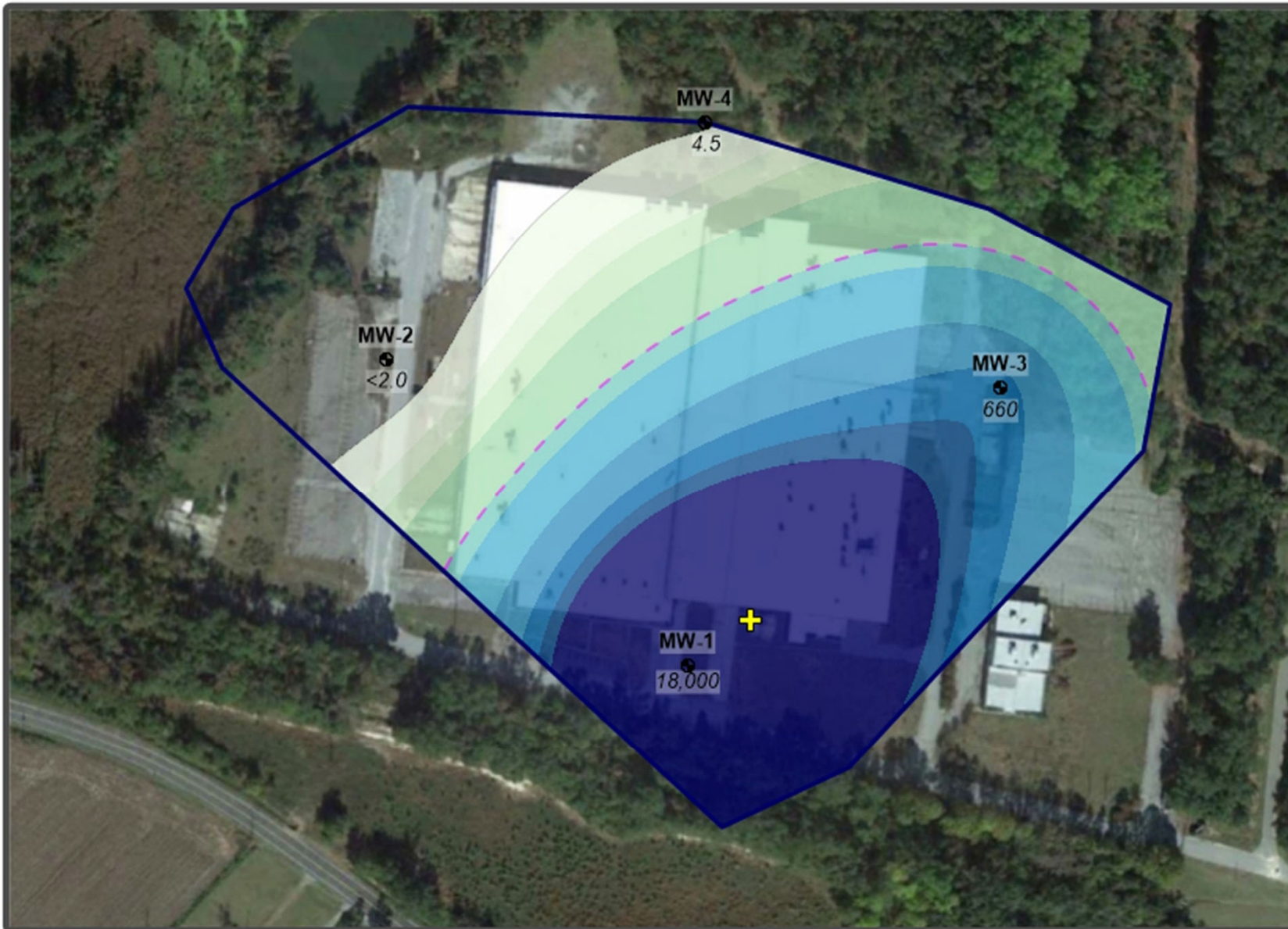


Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 61% Confidence
Regression: 13% Confidence

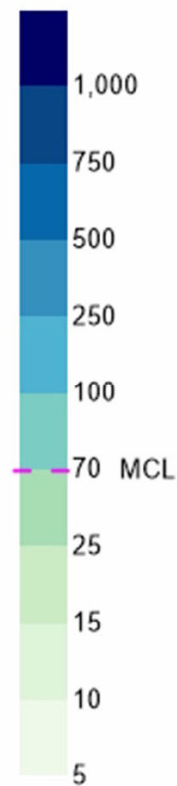


Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 61% Confidence
Regression: 47% Confidence

**cis-1,2-DCE
Upper Shallow
Sep-1999**



Concentration ($\mu\text{g/L}$)



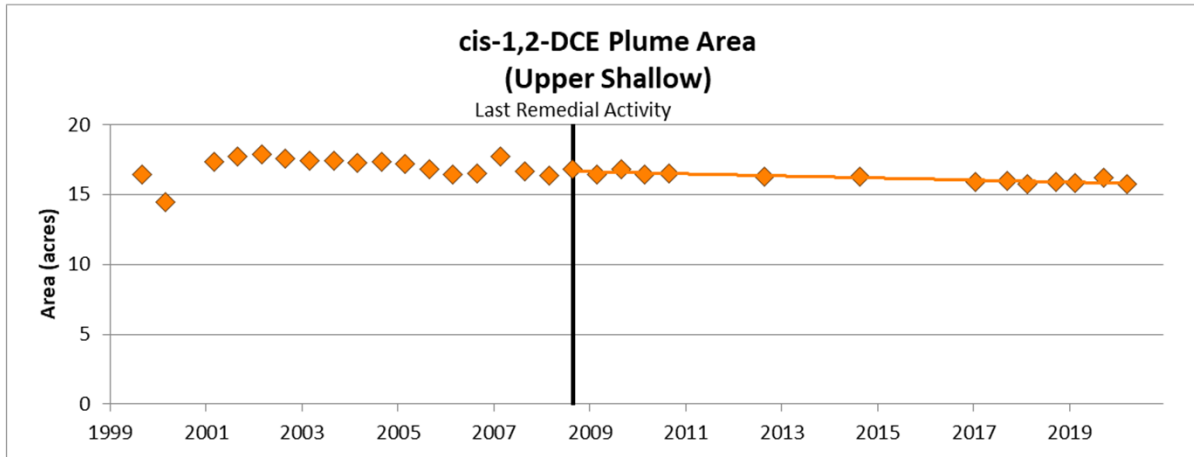
LEGEND	
	Monitoring Well
	Hanging Well
112	Concentration ($\mu\text{g/L}$)
NS (146)	Well Not Sampled (Assigned Value Shown)
	Plume Center of Mass
	MCL

Plume Characteristics

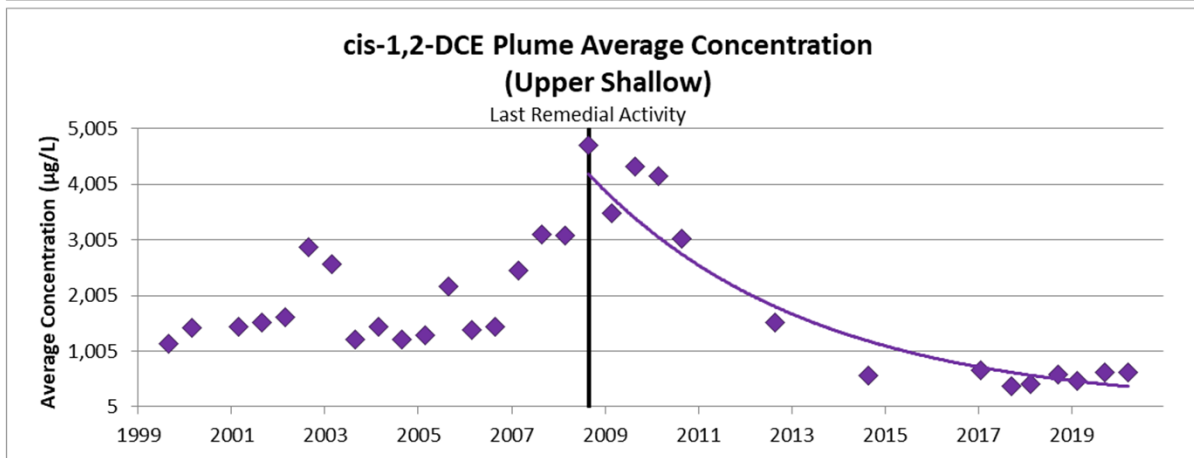
Plume Area: **16.4 acres**
 Plume Average Concentration: **1,144 $\mu\text{g/L}$**
 Plume Mass Indicator: **153 lbs**

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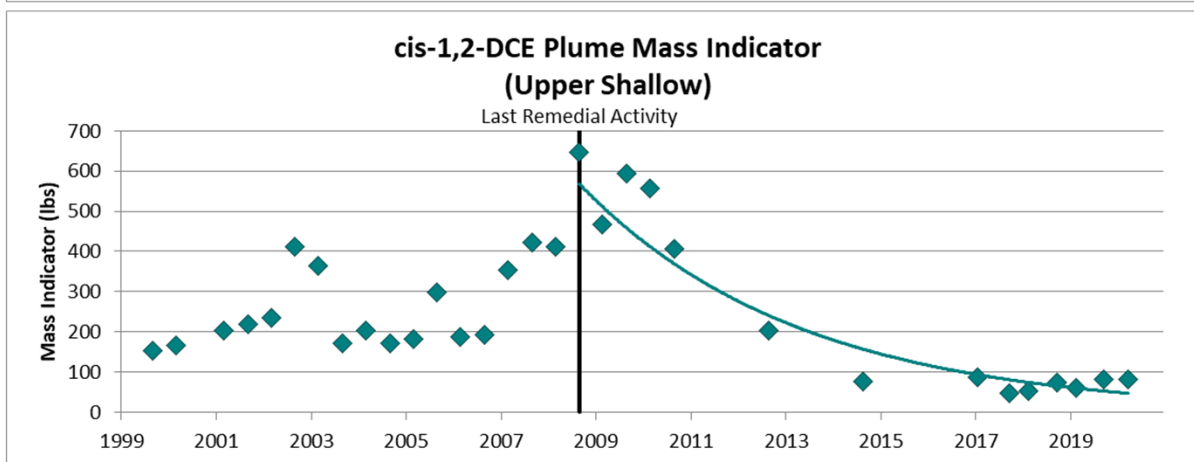




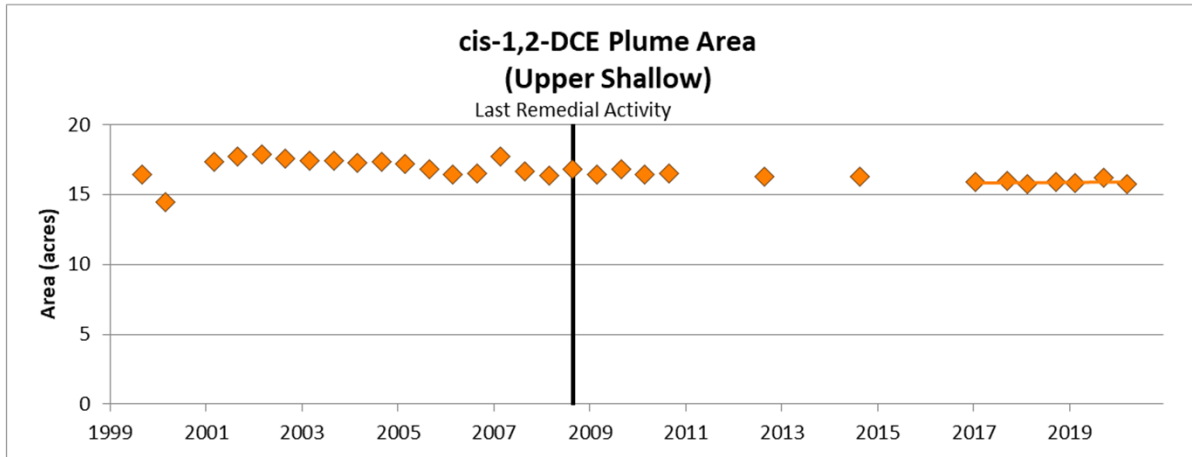
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



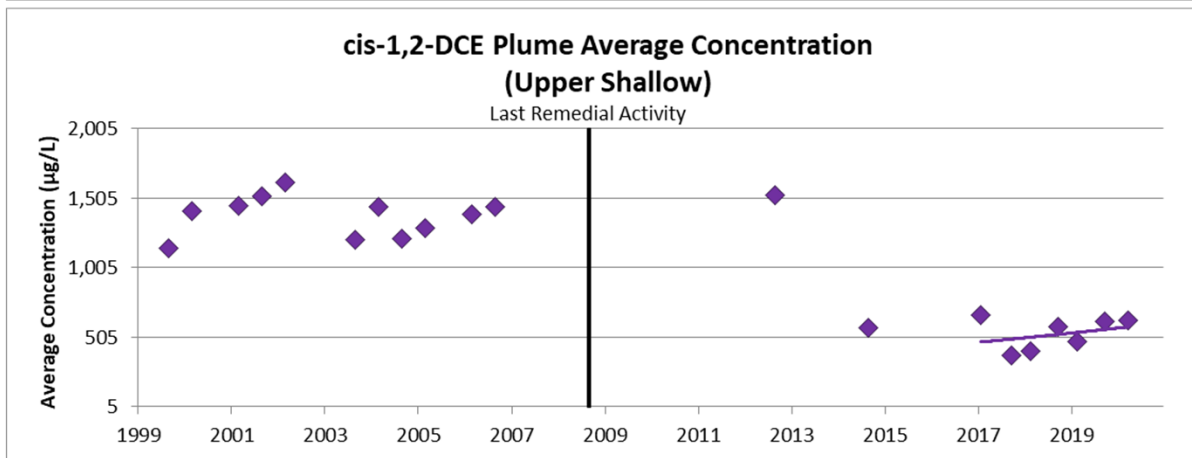
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



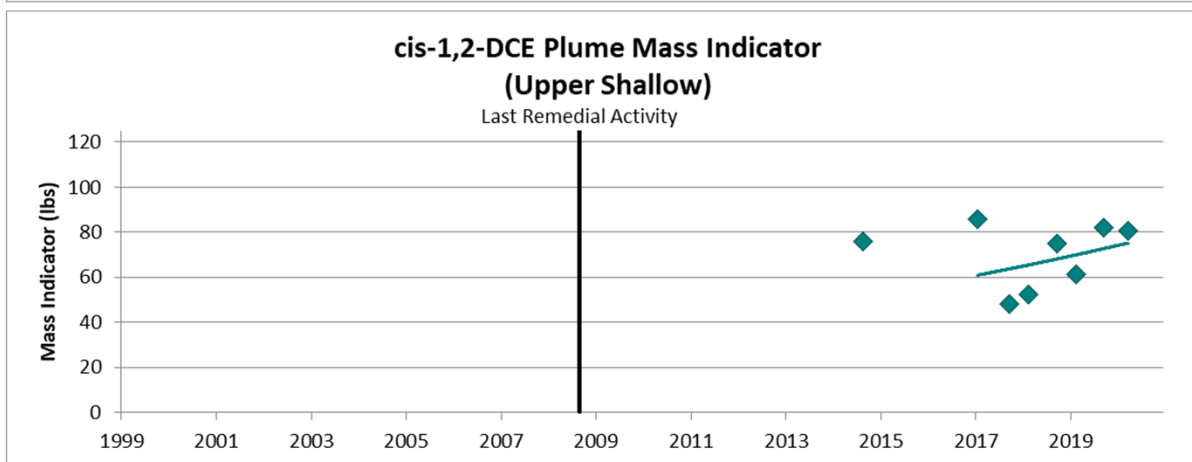
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 72% Confidence
 Regression: 9% Confidence



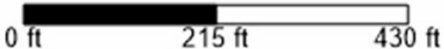
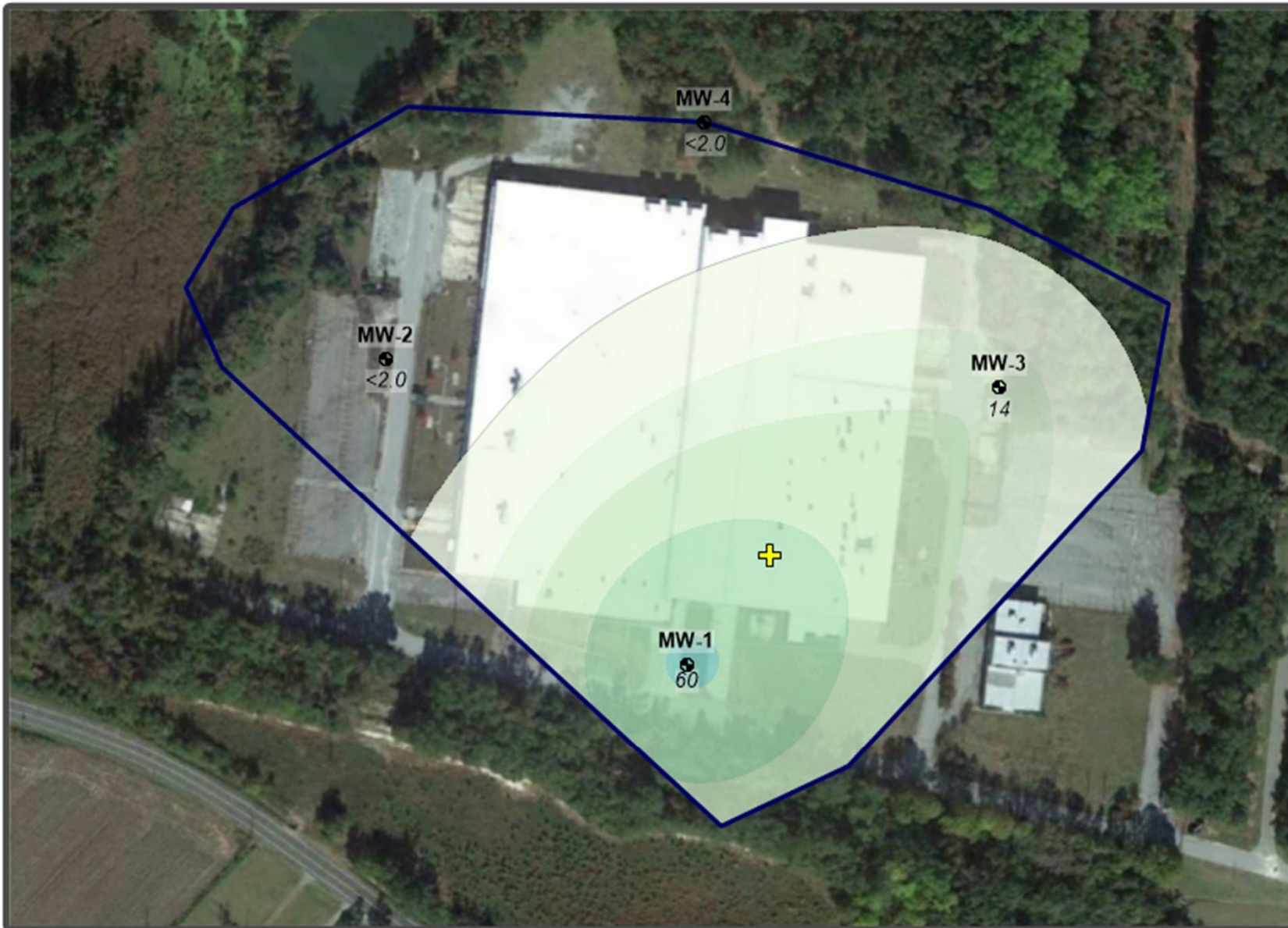
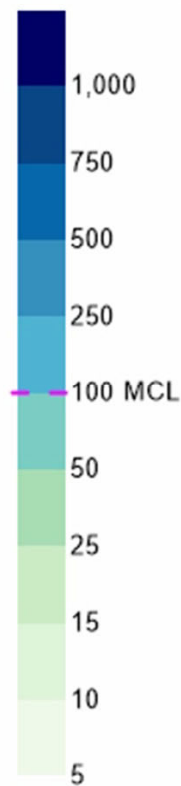
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 81% Confidence
 Regression: 52% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 72% Confidence
 Regression: 52% Confidence

trans-1,2-DCE
Upper Shallow
Sep-1999

Concentration ($\mu\text{g/L}$)



LEGEND	
	Monitoring Well
	Hanging Well
112	Concentration ($\mu\text{g/L}$)
NS (146)	Well Not Sampled (Assigned Value Shown)
	Plume Center of Mass
	MCL

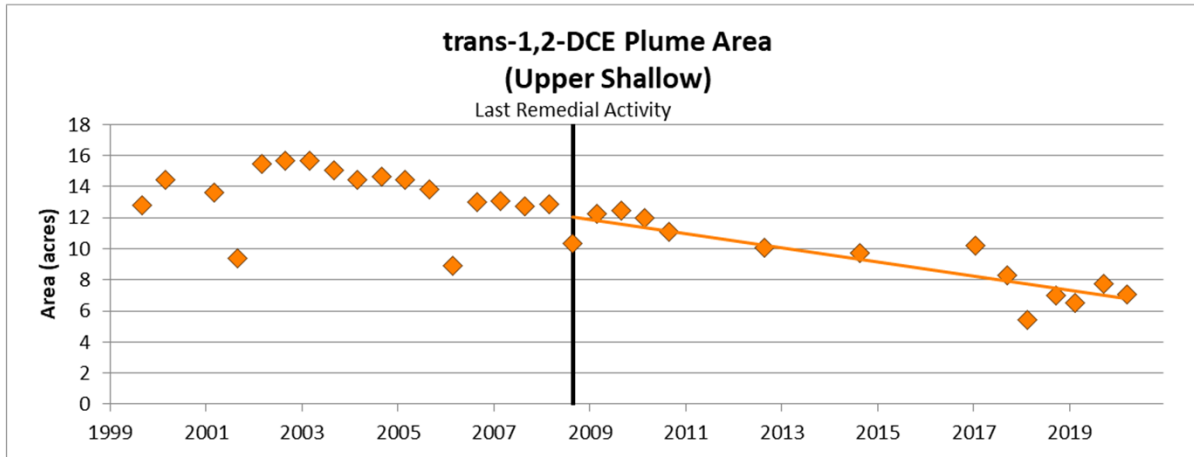
Plume Characteristics

Plume Area: **12.8 acres**
 Plume Average Concentration: **16.8 $\mu\text{g/L}$**
 Plume Mass Indicator: **1.8 lbs**

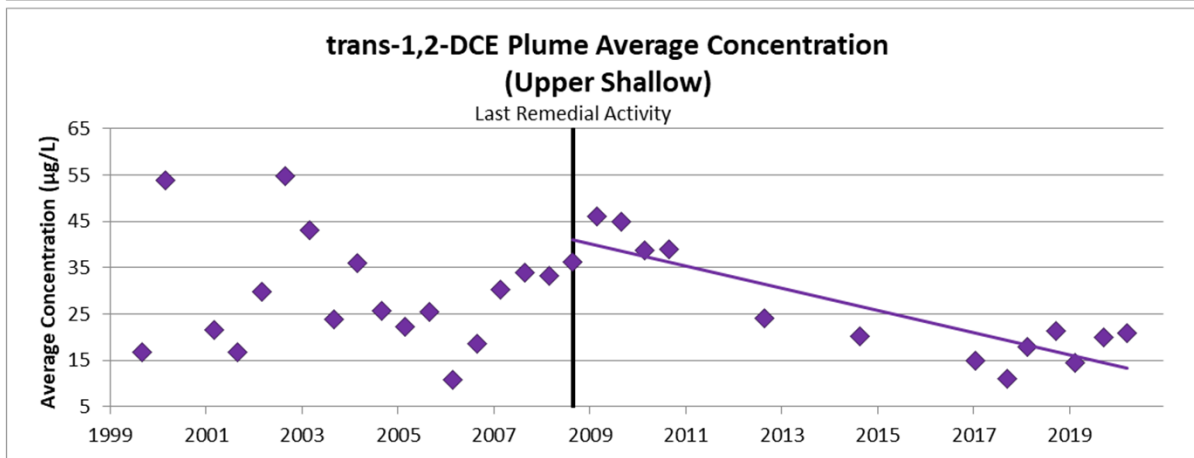
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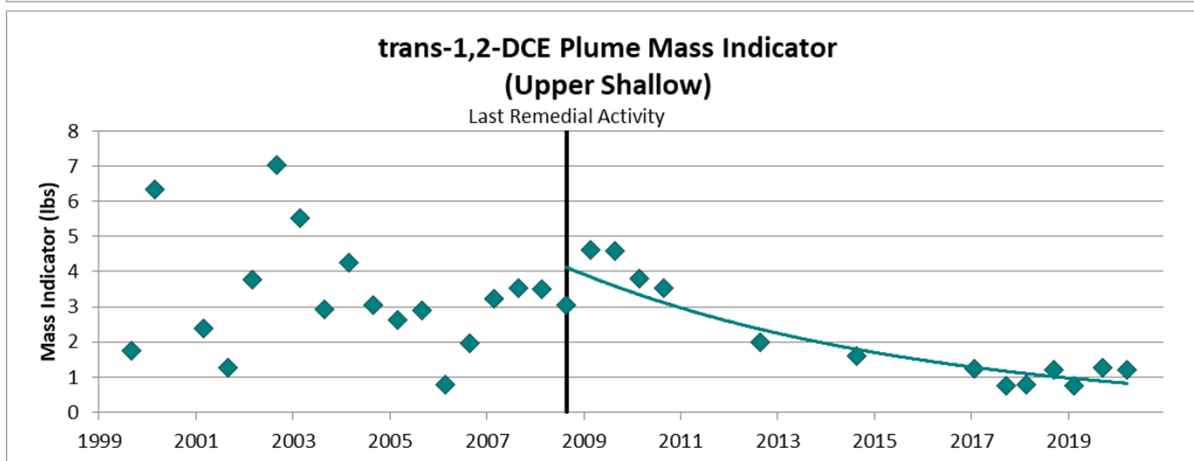
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BUSINESS SOLUTIONS



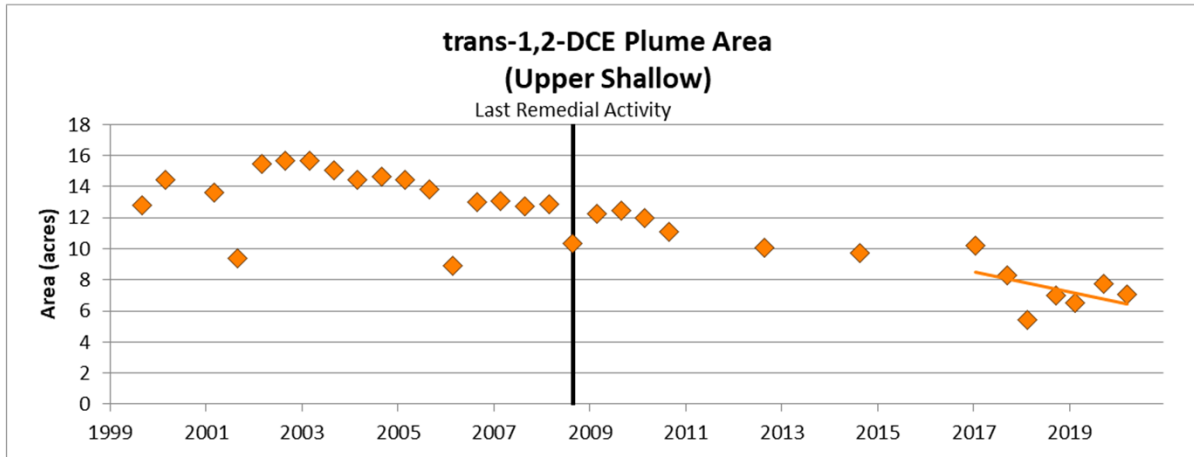
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



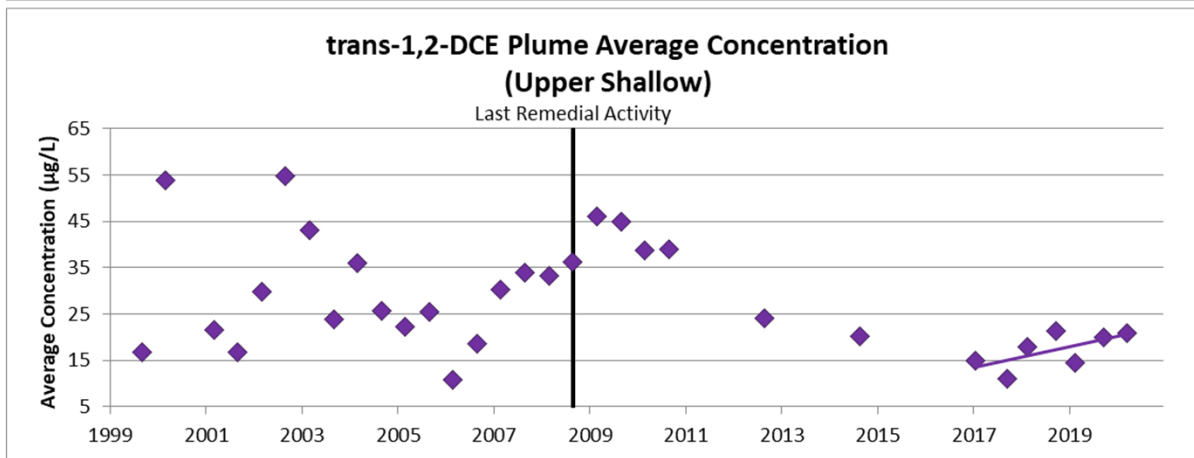
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: 99% Confidence
 Regression: >99% Confidence



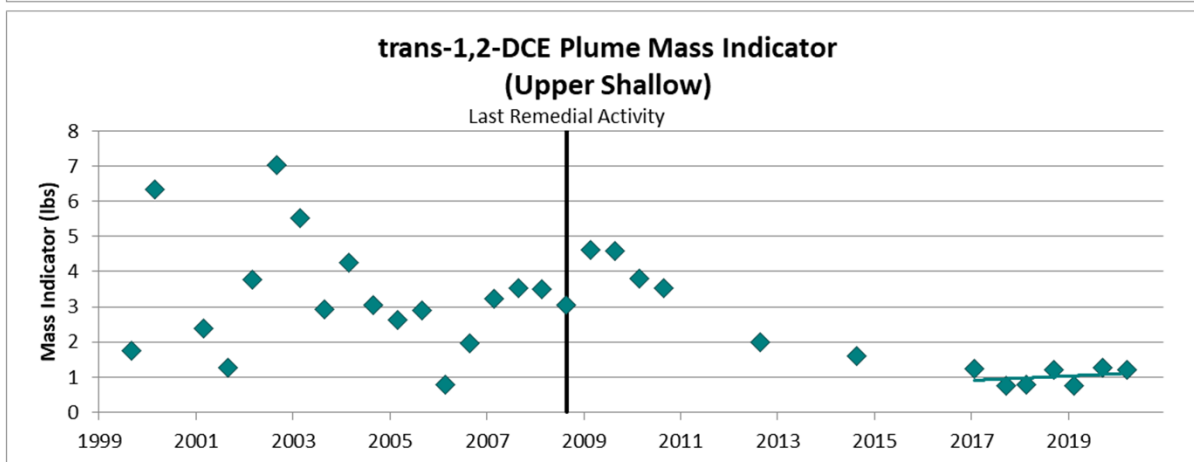
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 72% Confidence
 Regression: 72% Confidence



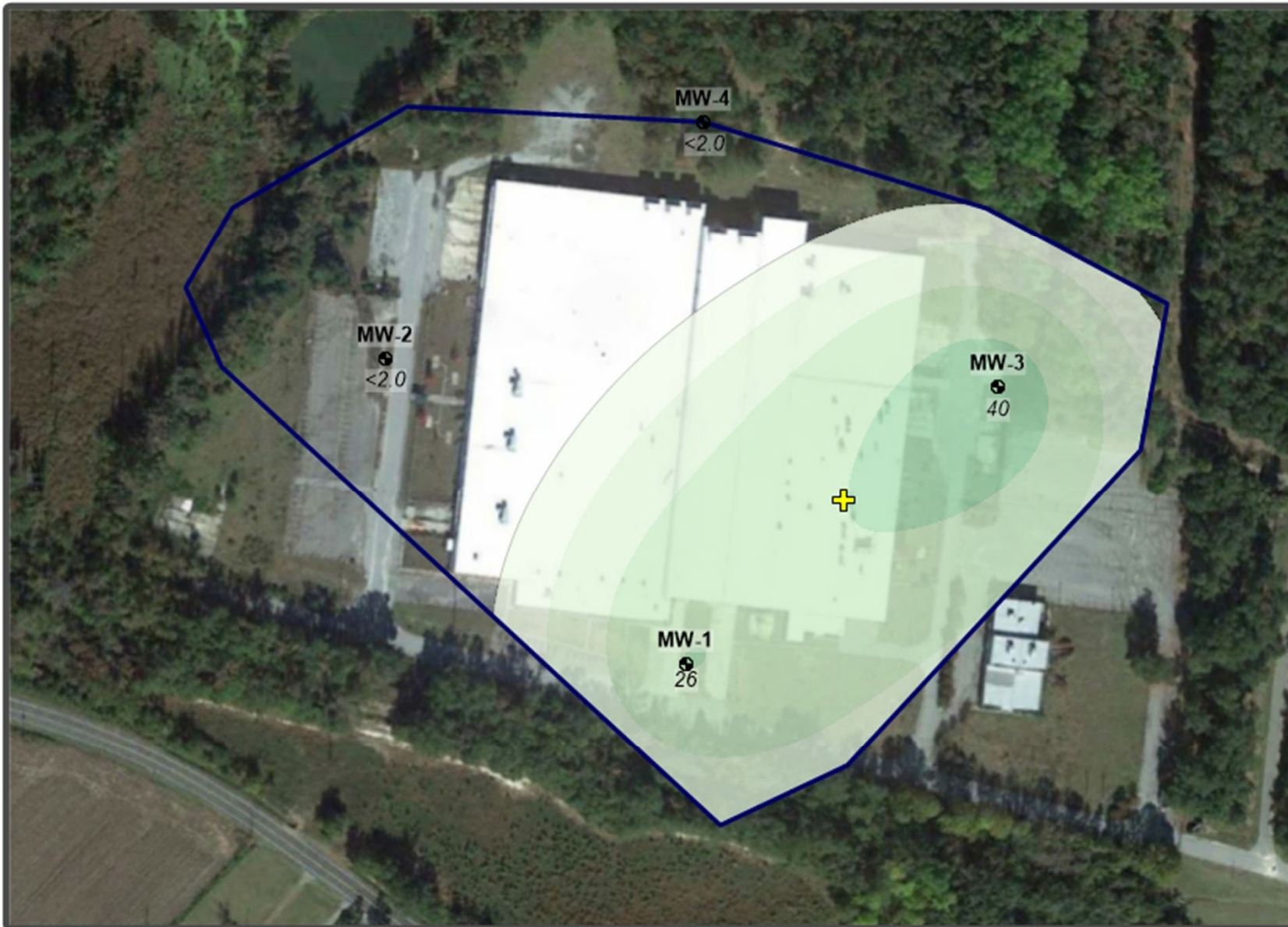
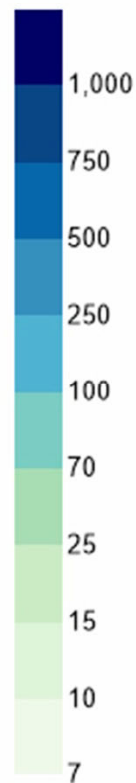
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 88% Confidence
 Regression: 88% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 61% Confidence
 Regression: 46% Confidence

**1,1-DCE
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



Plume Characteristics

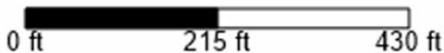
Plume Area: **11.9 acres**
 Plume Average Concentration: **17.2 $\mu\text{g/L}$**
 Plume Mass Indicator: **1.7 lbs**

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Environmental Challenges
BUSINESS SOLUTIONS

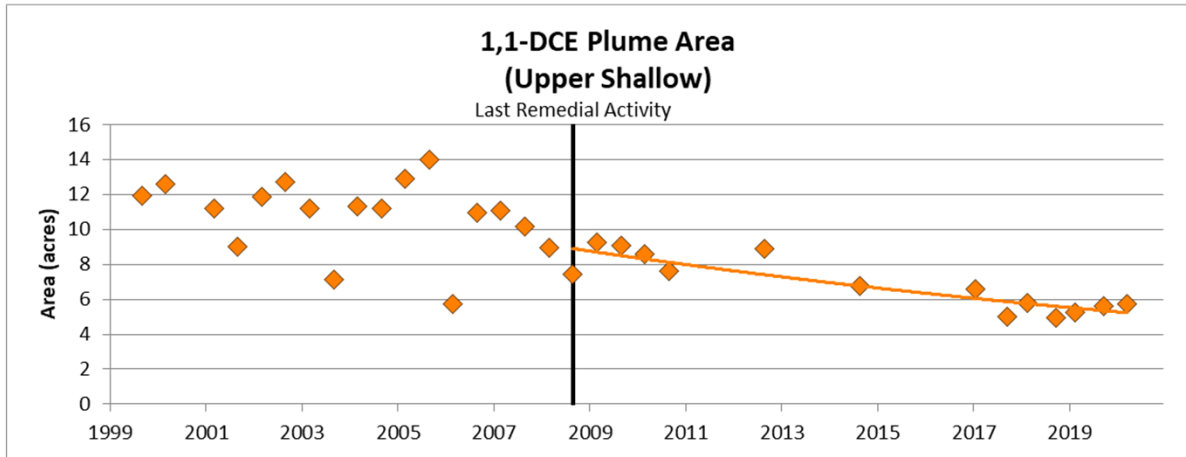
© EarthCon 2020



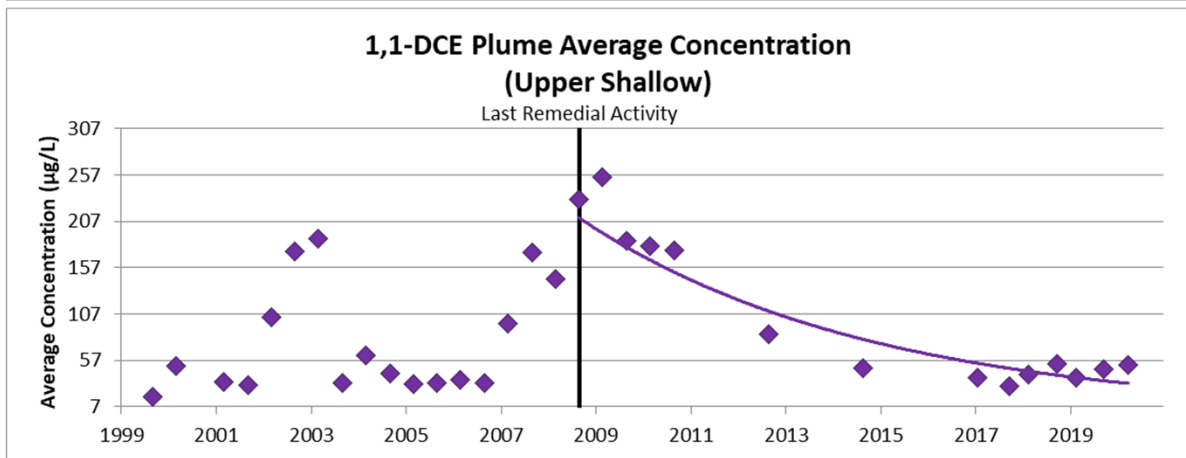
LEGEND

- MW-1 Monitoring Well
- MW-3 Hanging Well
- 112 Concentration ($\mu\text{g/L}$)
- NS (149) Well Not Sampled (Assigned Value Shown)
- Plume Center of Mass

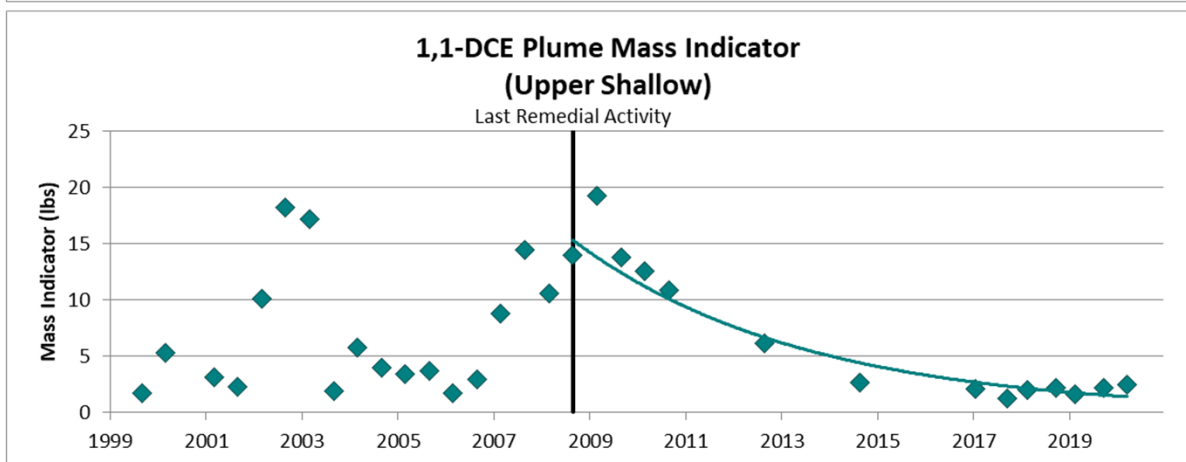




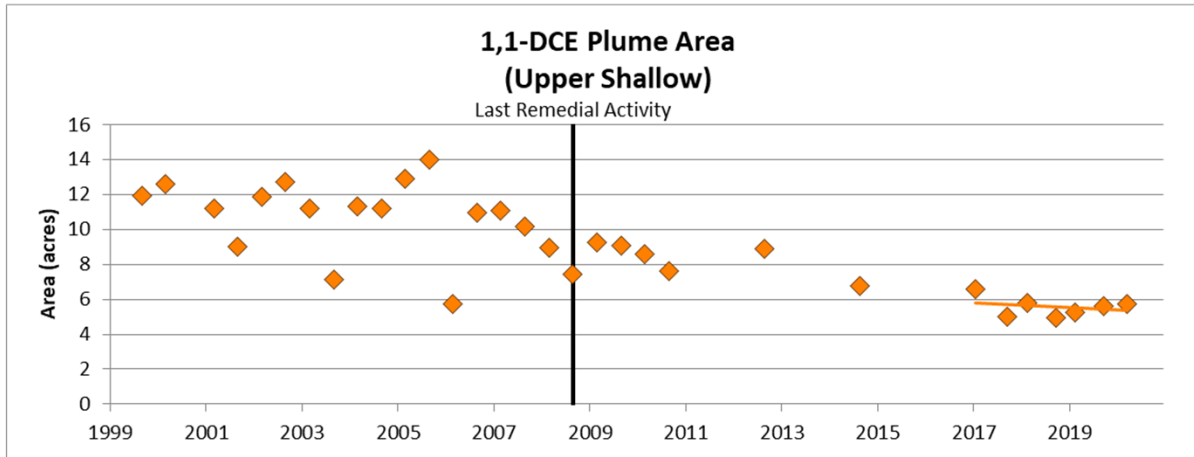
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



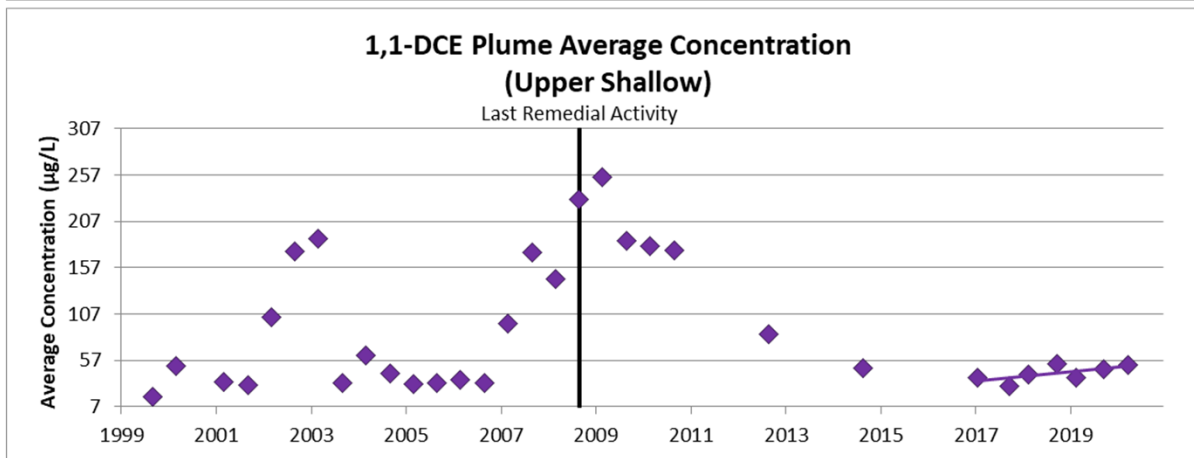
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



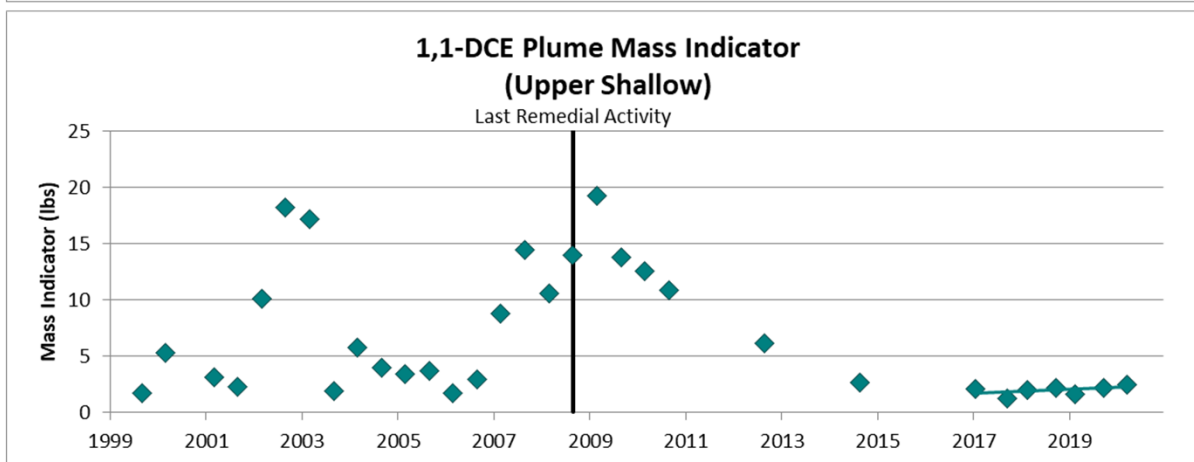
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 50% Confidence
 Regression: 45% Confidence



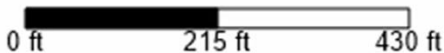
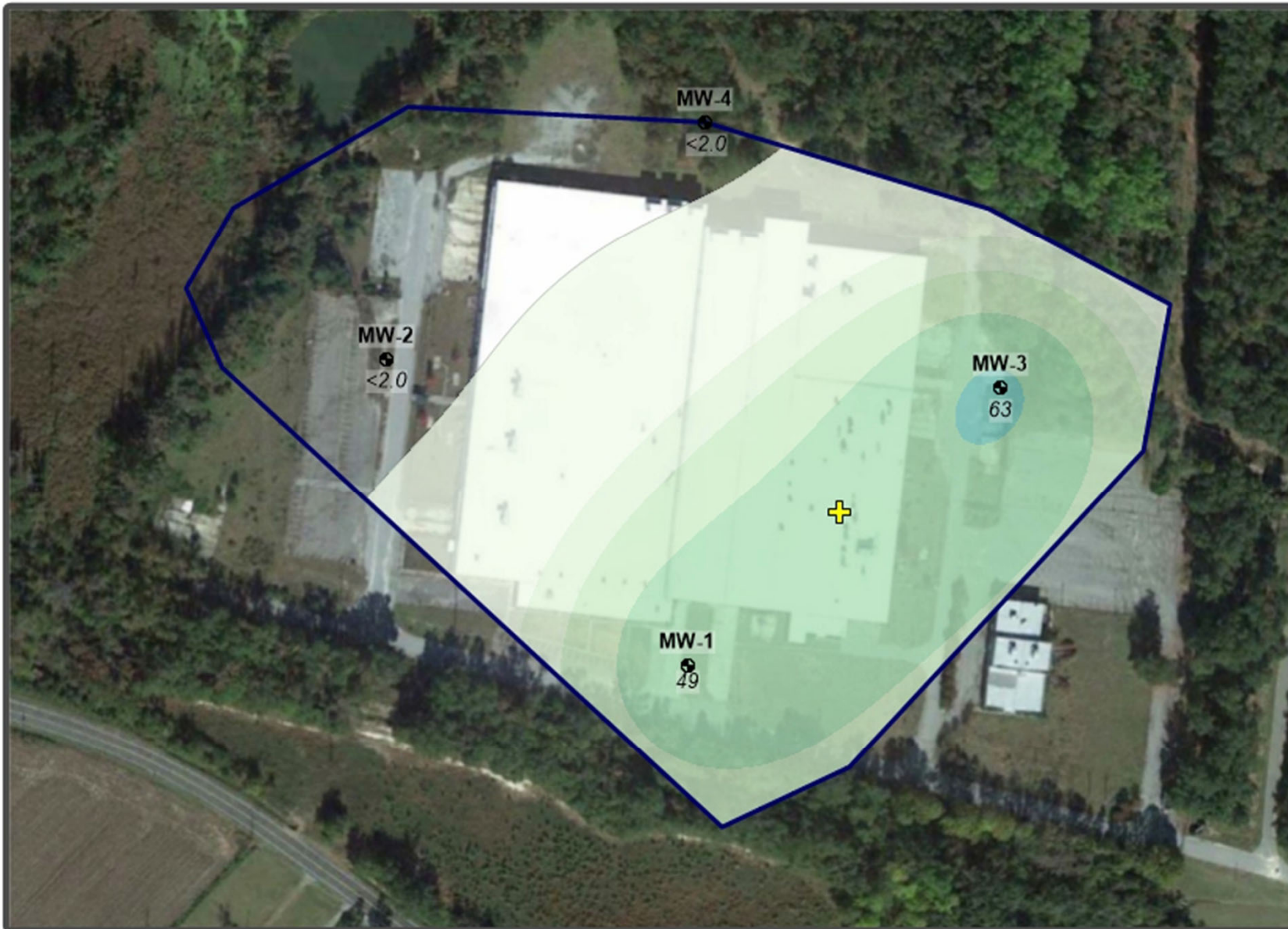
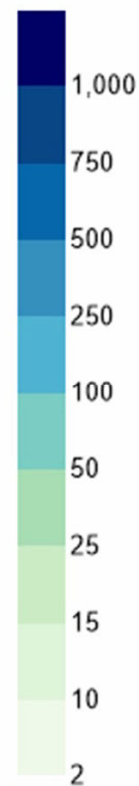
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 88% Confidence
 Regression: 89% Confidence



Feb-2017 to Apr-2020
 No Trend/Increasing Trend
 Mann-Kendall: 93% Confidence
 Regression: 73% Confidence

**Vinyl Chloride
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



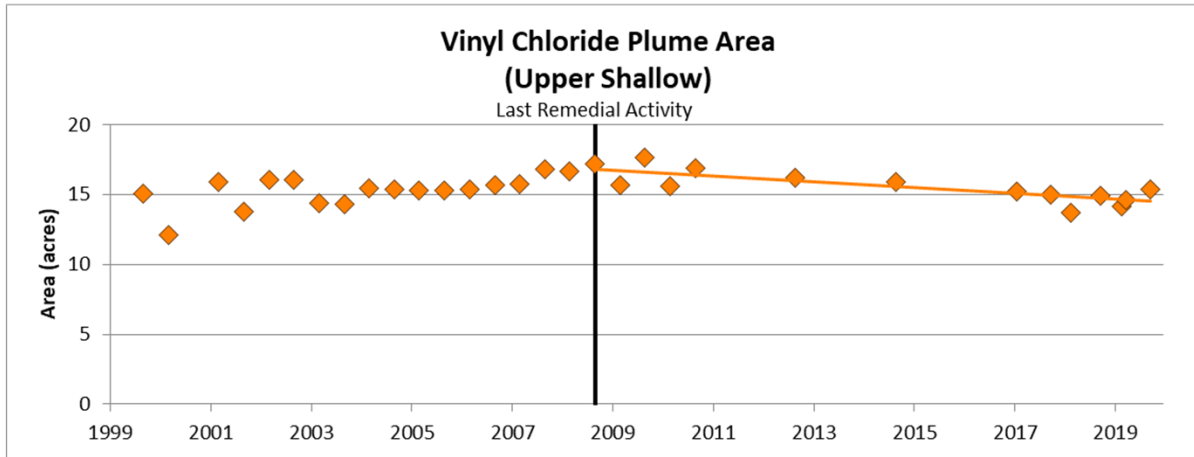
LEGEND	
MW-1	Monitoring Well
MW-3	Hanging Well
112	Concentration ($\mu\text{g/L}$)
NS (140)	Well Not Sampled (Assigned Value Shown)
+	Plume Center of Mass

Plume Characteristics

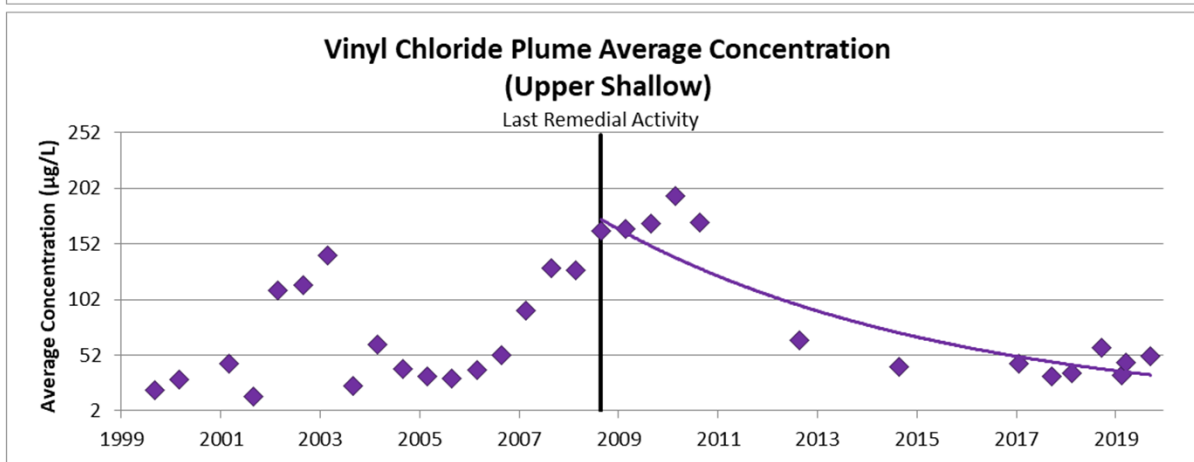
Plume Area: **15.1 acres**
 Plume Average Concentration: **20.4 $\mu\text{g/L}$**
 Plume Mass Indicator: **2.5 lbs**

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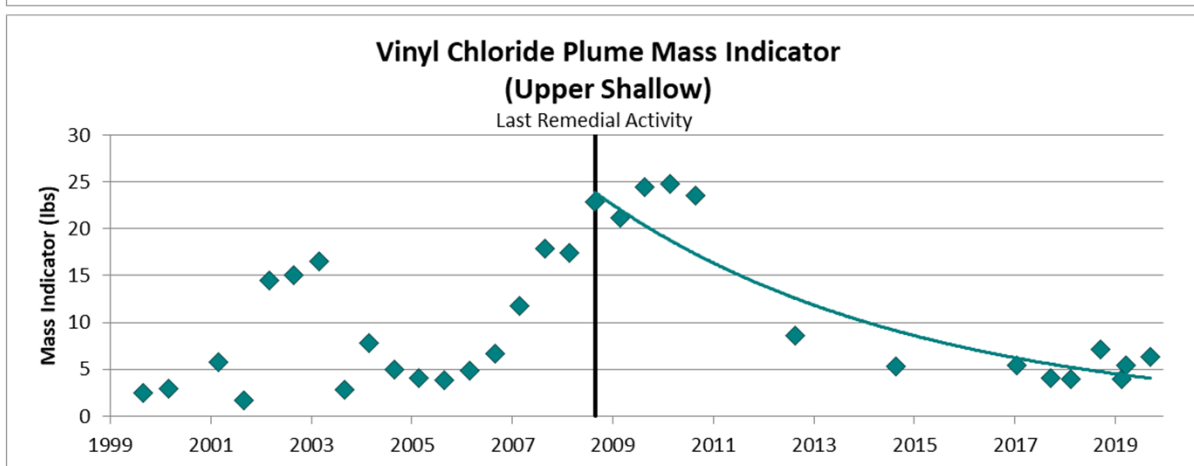




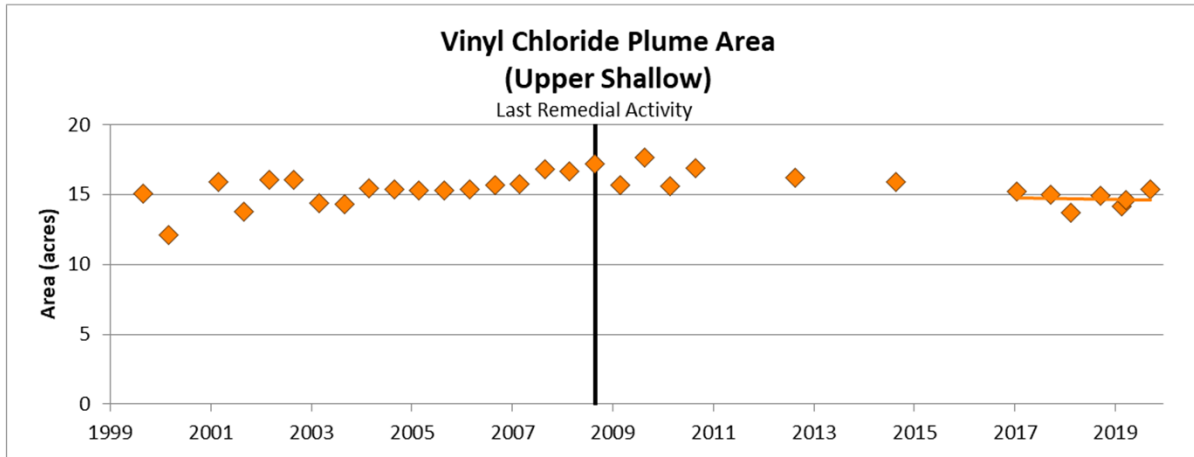
Sep-2008 to Apr-2019
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



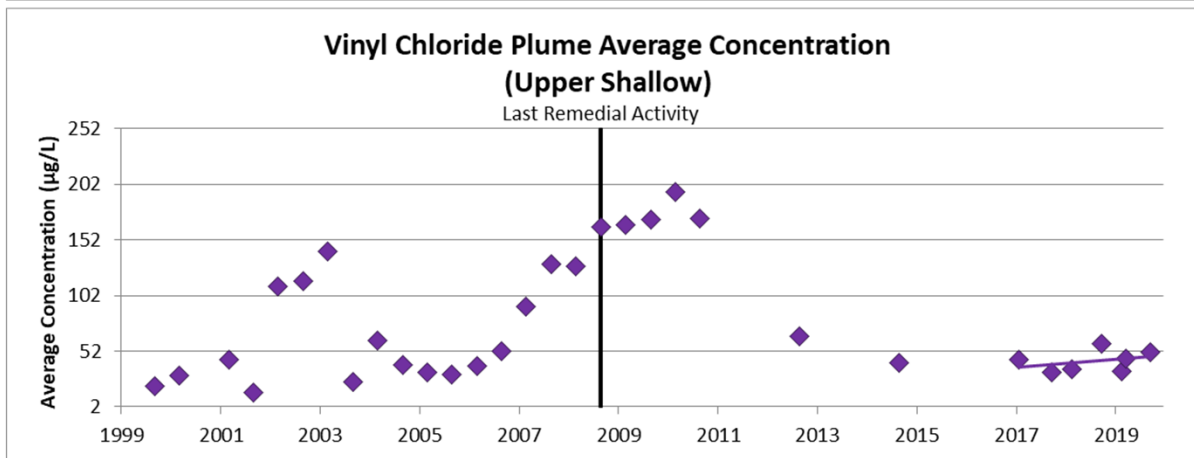
Sep-2008 to Apr-2019
 Decreasing Trend
 Mann-Kendall: 98% Confidence
 Regression: >99% Confidence



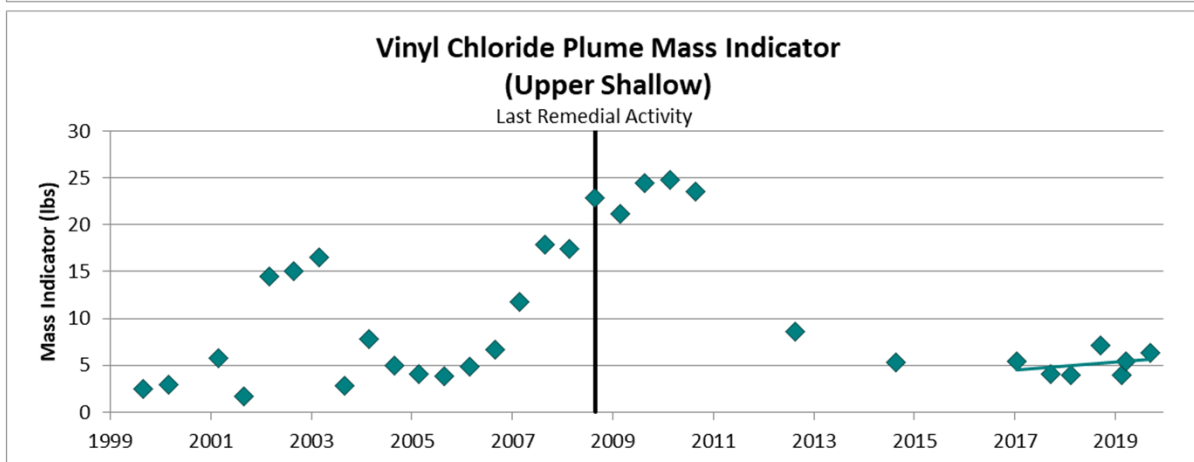
Sep-2008 to Apr-2019
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2019
 No Trend
 Mann-Kendall: 61% Confidence
 Regression: 12% Confidence



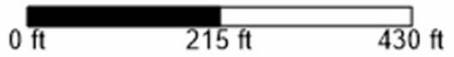
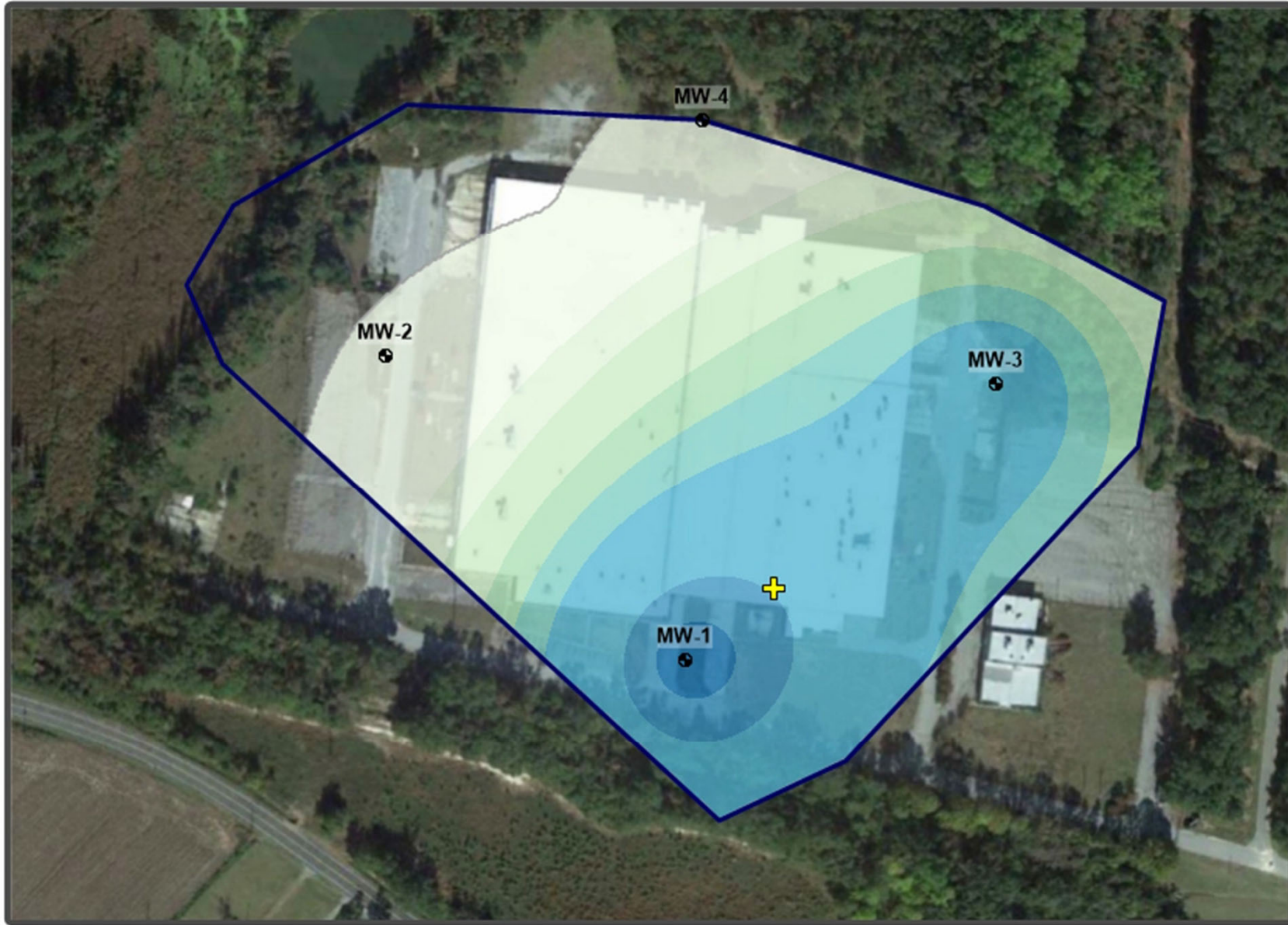
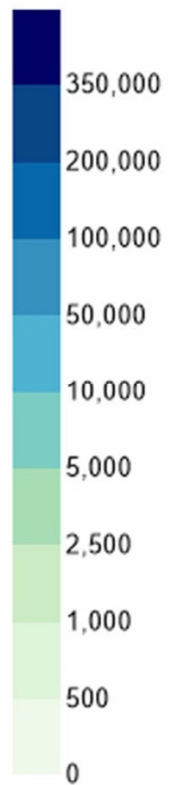
Feb-2017 to Apr-2019
 No Trend
 Mann-Kendall: 72% Confidence
 Regression: 55% Confidence



Feb-2017 to Apr-2019
 No Trend
 Mann-Kendall: 50% Confidence
 Regression: 49% Confidence

**Total Chloroethenes
Upper Shallow
Sep-1999**

Concentration (nmol/L)



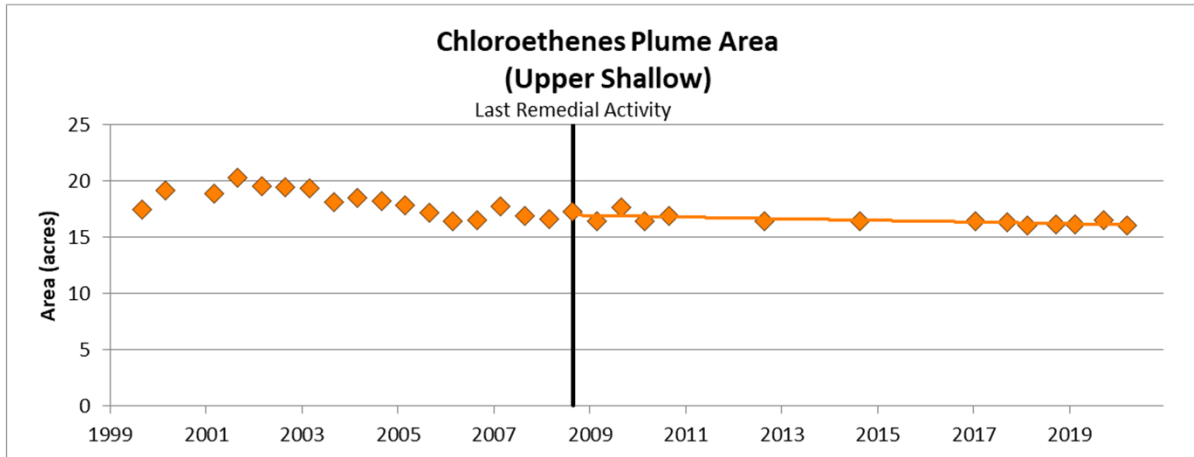
LEGEND

- MW-1 Monitoring Well
- MW-3 Hanging Well
- Plume Center of Mass

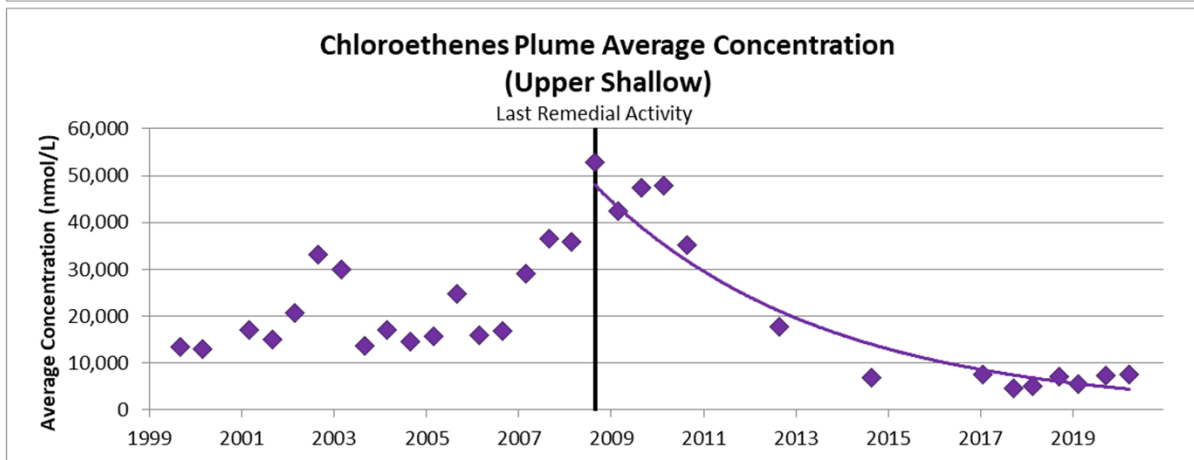
Plume Characteristics

Plume Area: **17.4 acres**
 Plume Average Concentration: **13,471 nmol/L**
 Plume Mass Indicator: **869 moles**

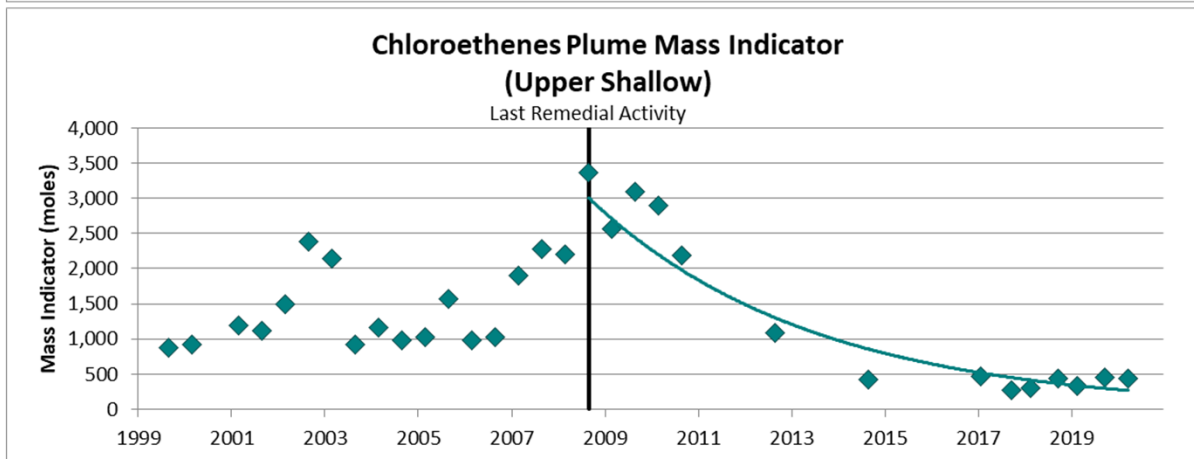
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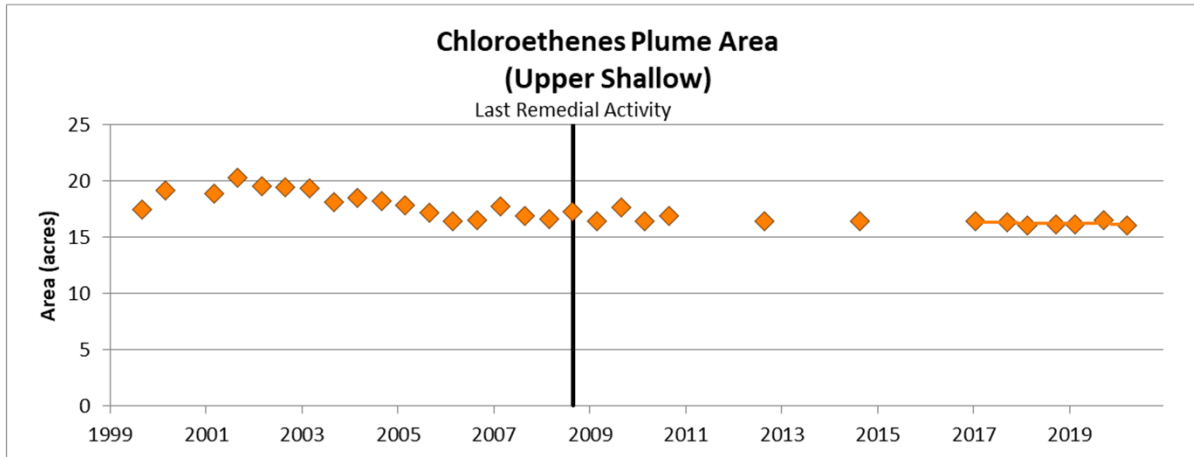
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: 99% Confidence
Regression: >99% Confidence



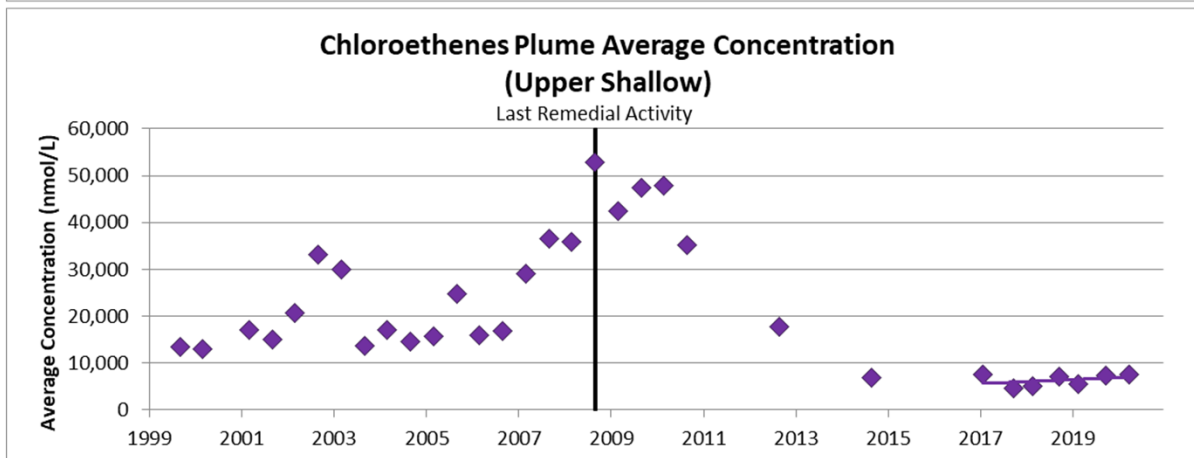
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



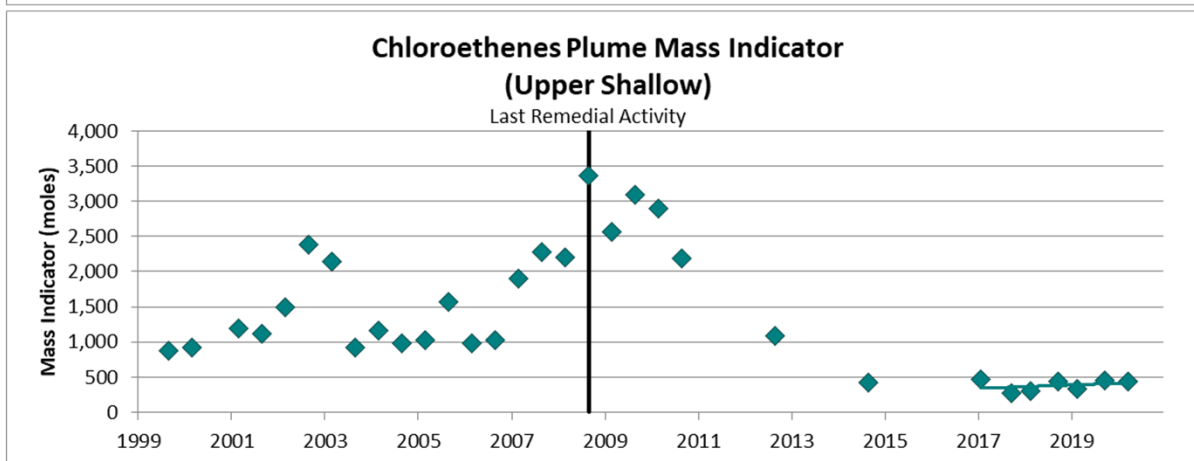
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



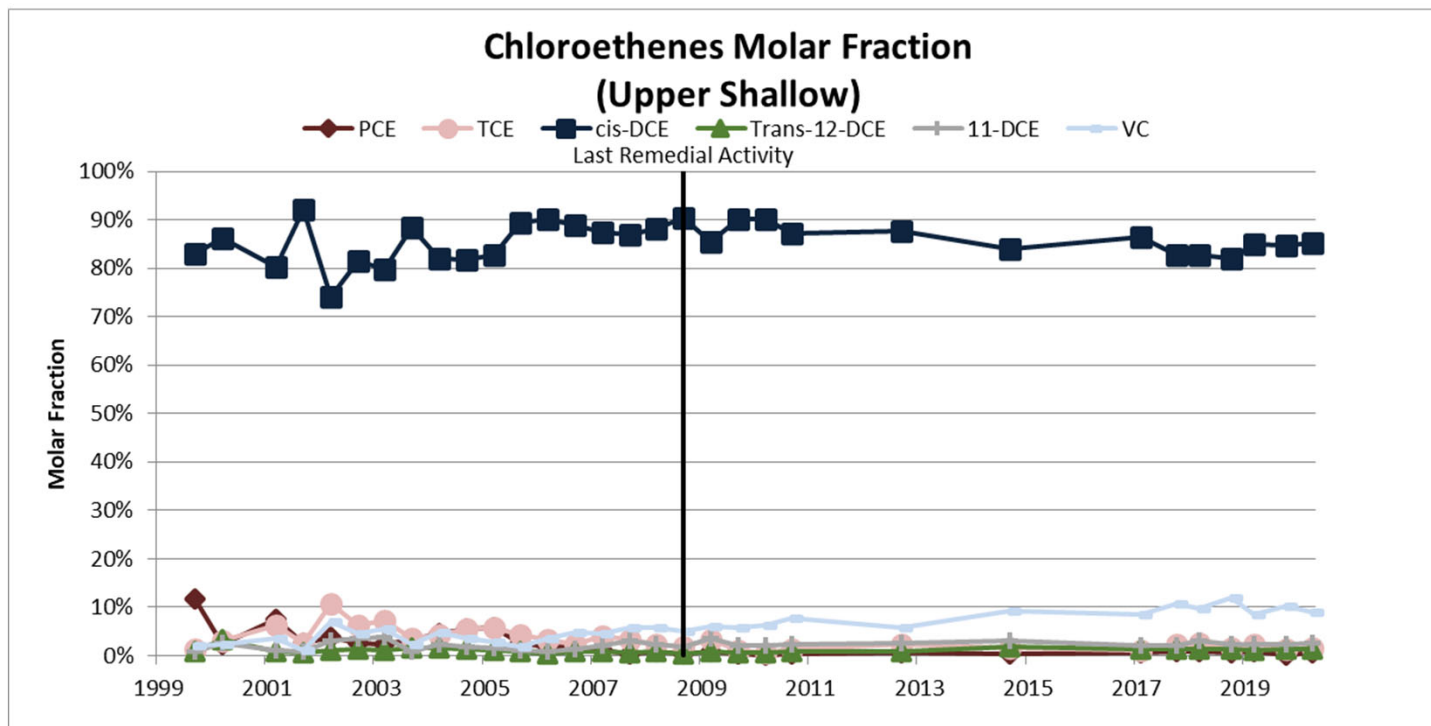
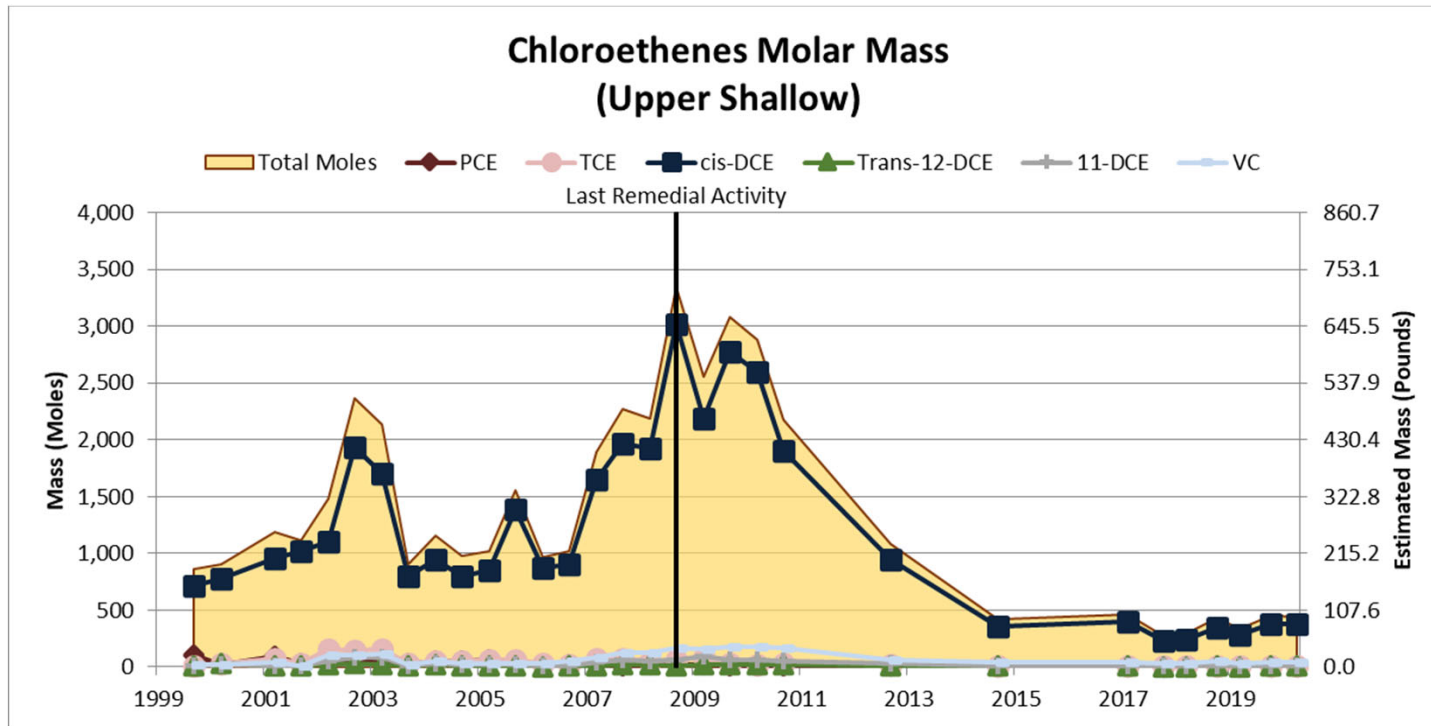
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 61% Confidence
 Regression: 49% Confidence



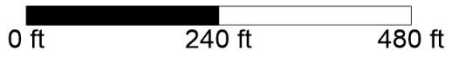
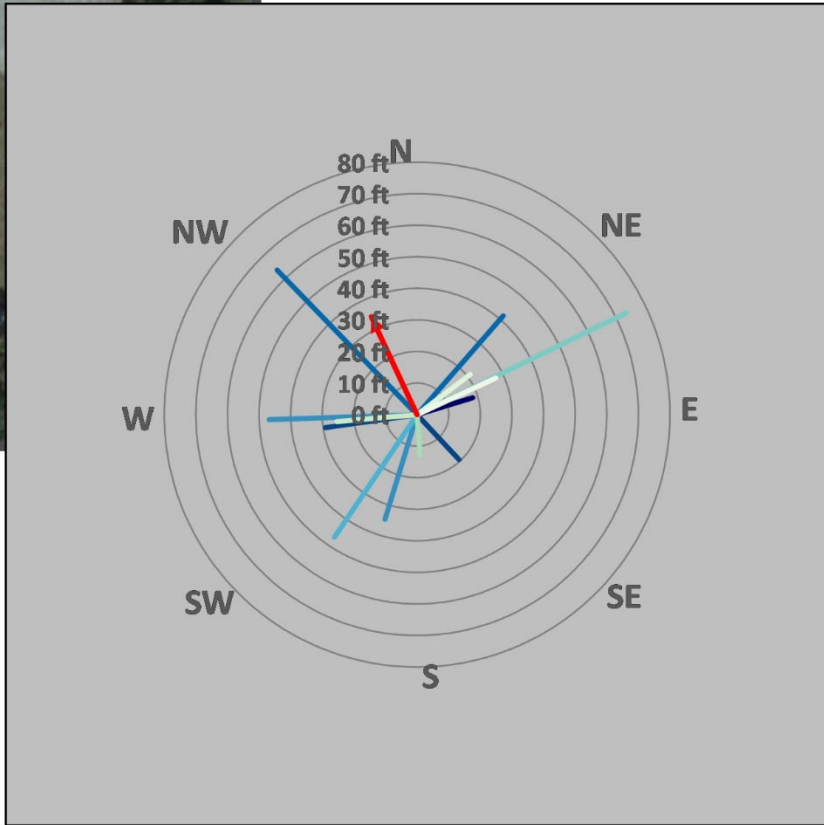
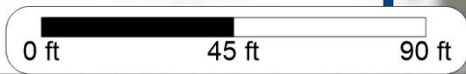
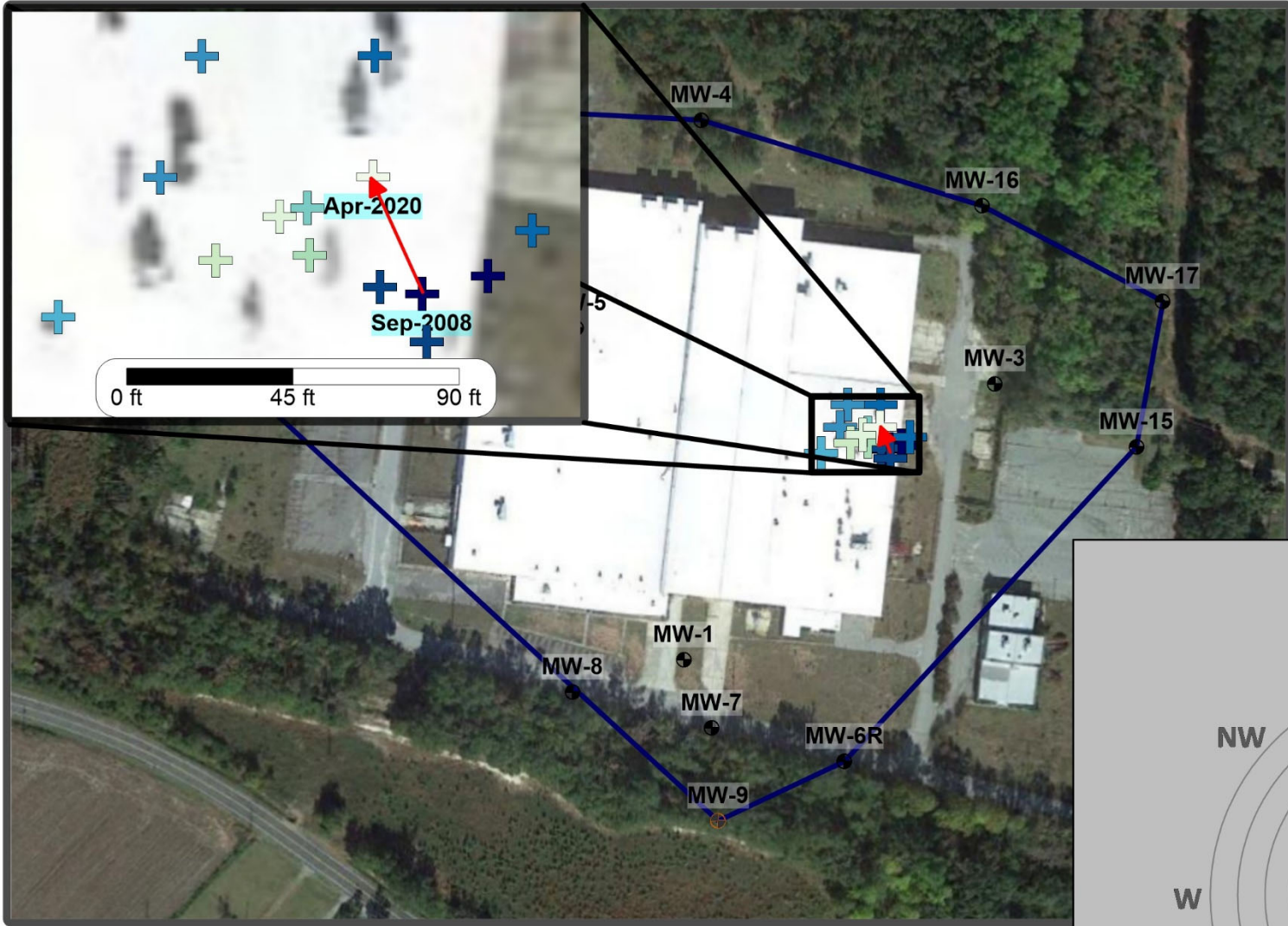
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 81% Confidence
 Regression: 56% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 72% Confidence
 Regression: 53% Confidence

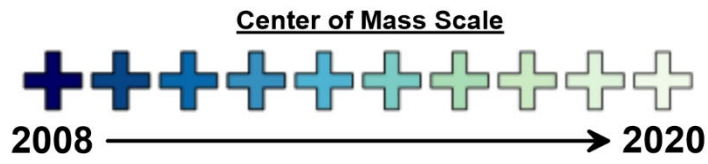


**Total Chloroethenes
Level
Center of Mass**



LEGEND

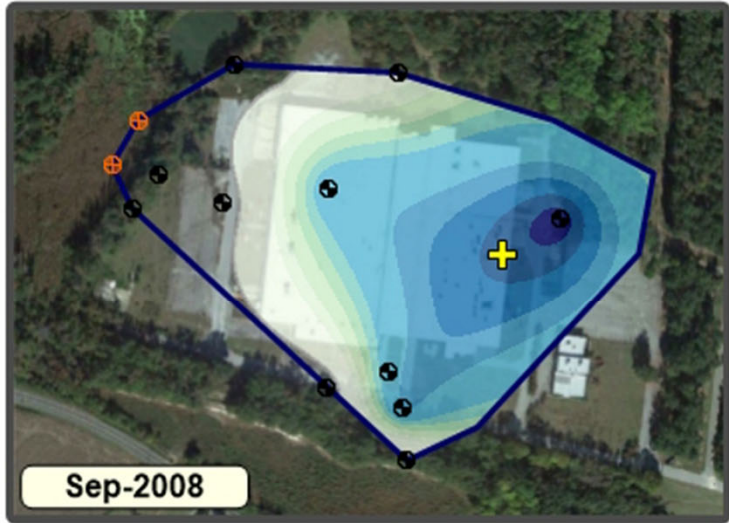
- MW-4 Monitoring Well
- MW-5 Hanging Well
- Center of Mass Movement
- Net Movement



This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

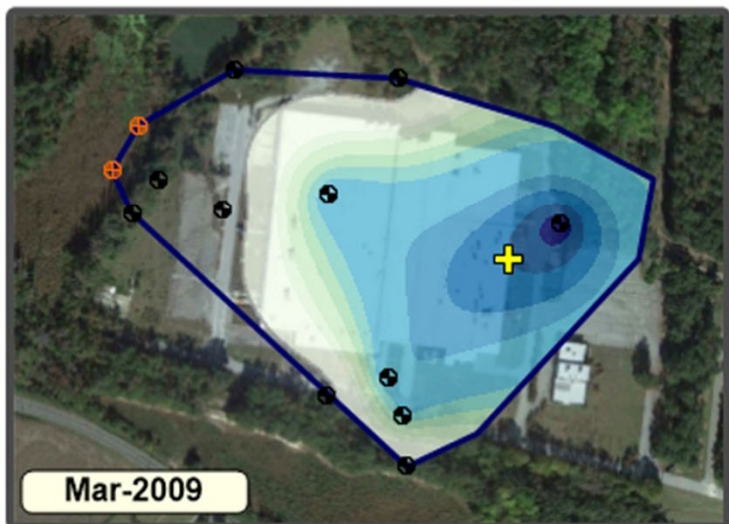
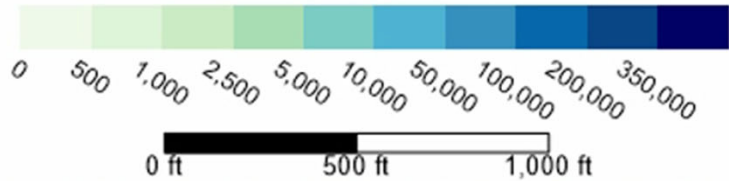
**Chloroethenes
Upper Shallow**

Plume Differences Sep-2008 vs Mar-2009

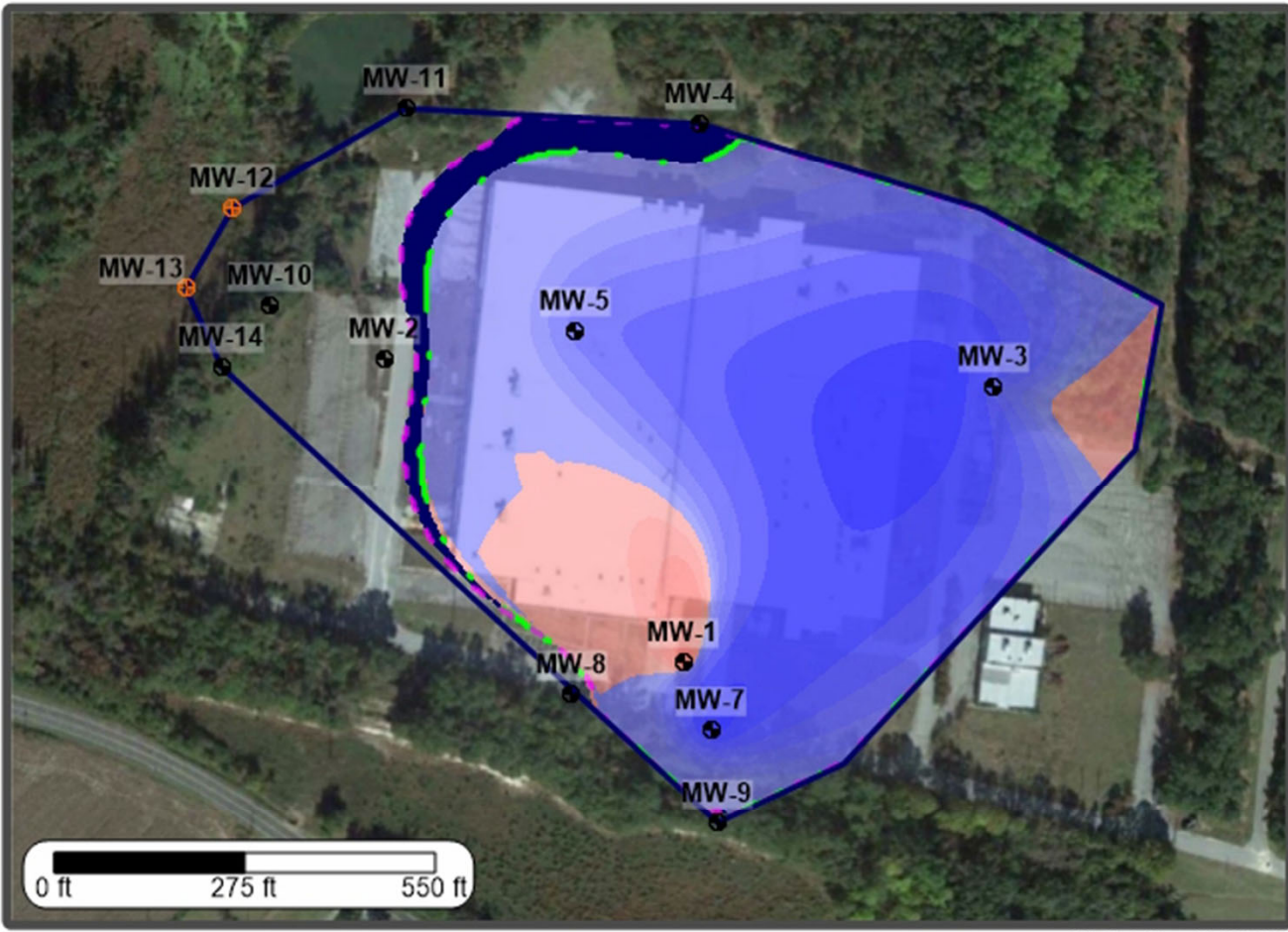


Sep-2008

Concentration (nmol/L)



Mar-2009



US Pat. No. 10,400,583

Spatial Change Indicator™



LEGEND

- MW-4 Monitoring Well
- MW-5 Hanging Well
- Plume Center of Mass
- Sep-2008 Plume Boundary
- Mar-2009 Plume Boundary

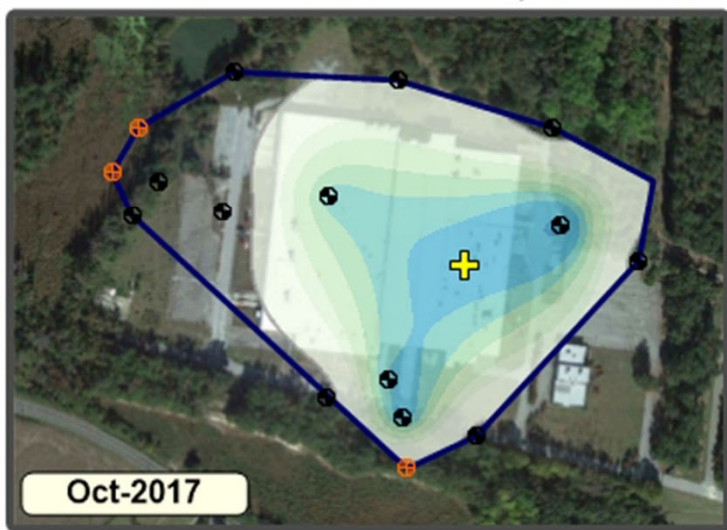
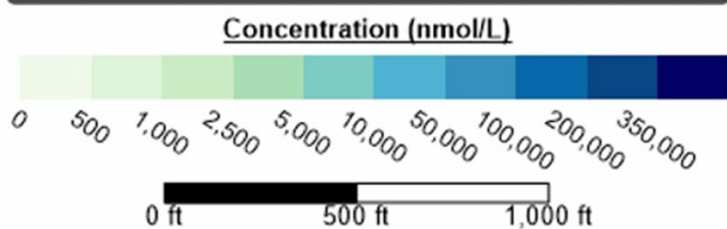
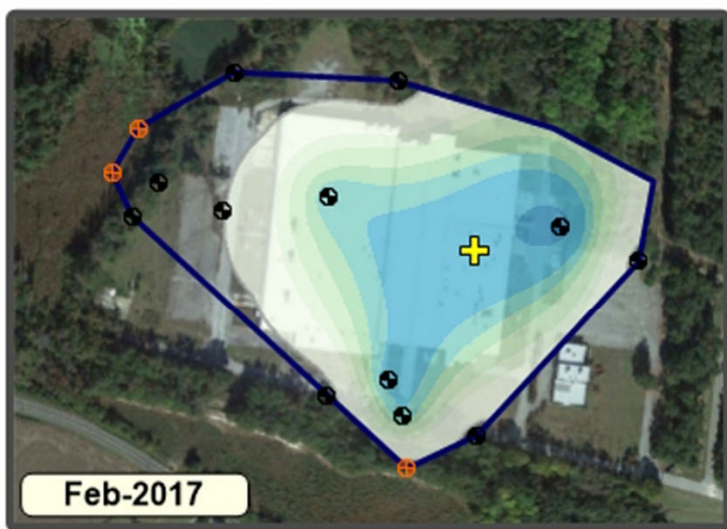
Plume Characteristics

- Area: 5% Decrease
- Average Concentration: 20% Decrease
- Mass Indicator: 24% Decrease
- Mass Increase: 5.87 moles Increase
- Mass Decrease: 800 moles Decrease

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Chloroethenes
Upper Shallow**

Plume Differences Feb-2017 vs Oct-2017



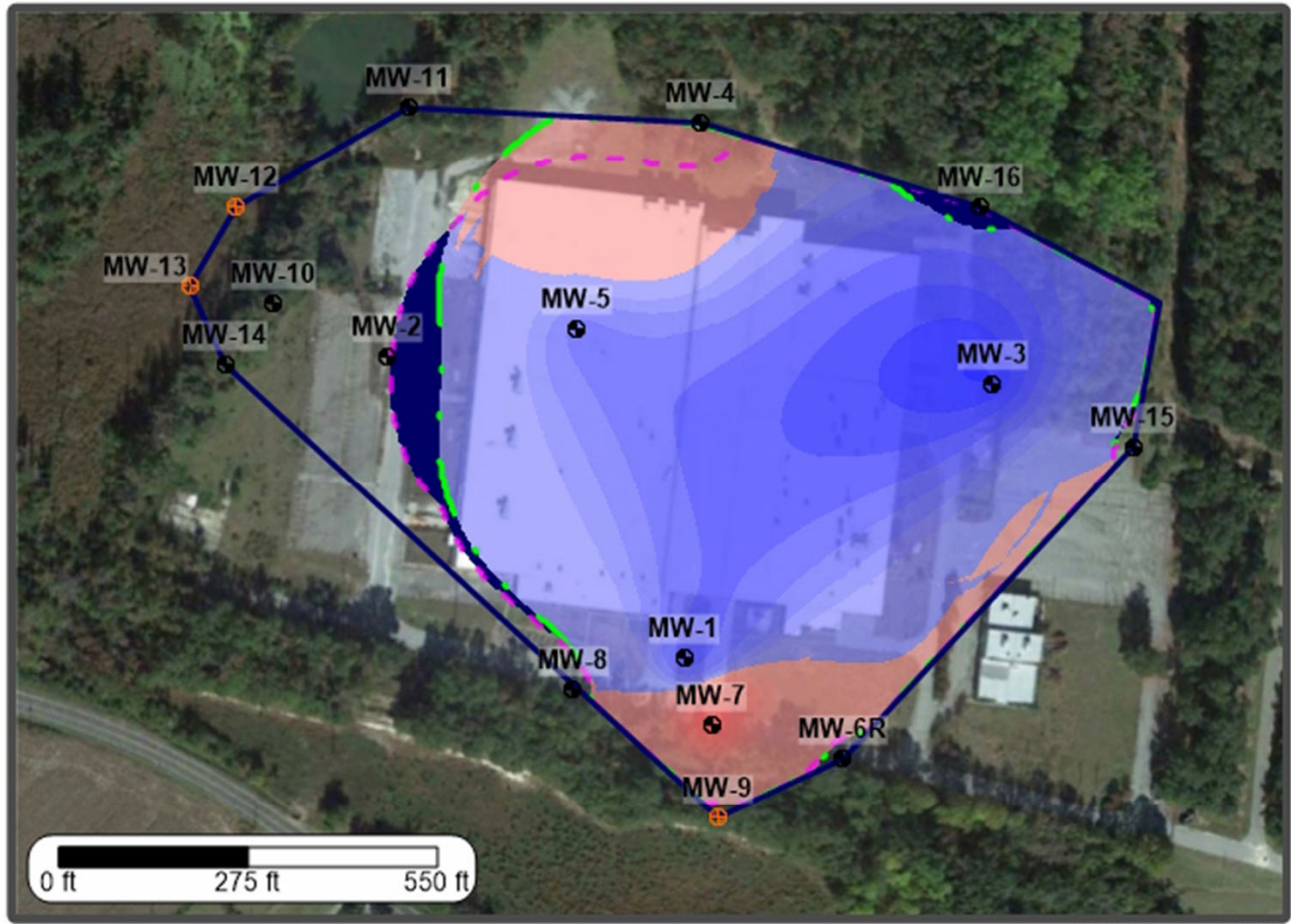
Oct-2017

LEGEND

- MW-4 Monitoring Well
- MW-5 Hanging Well
- ⊕ Plume Center of Mass
- - Feb-2017 Plume Boundary
- Oct-2017 Plume Boundary

Plume Characteristics

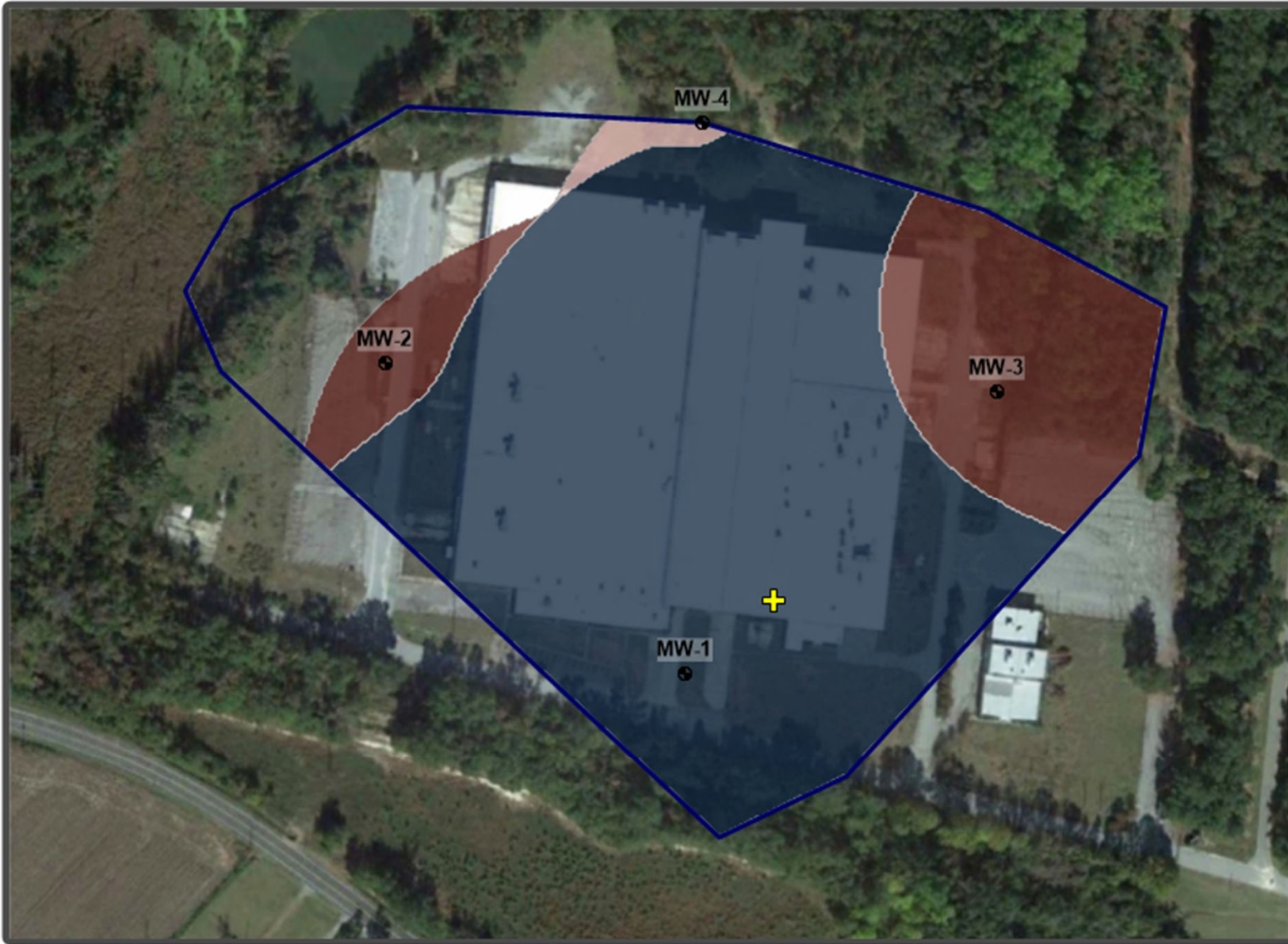
- Area: **1% Decrease**
- Average Concentration: **41% Decrease**
- Mass Indicator: **41% Decrease**
- Mass Increase: **4.40 moles Increase**
- Mass Decrease: **197 moles Decrease**



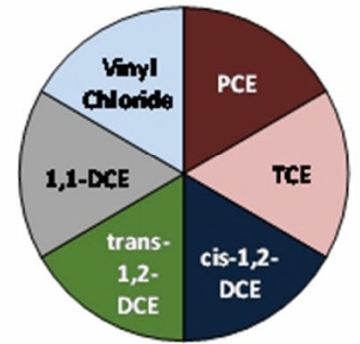
This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

US Pat. No. 10,400,583

**Total Chloroethenes
Upper Shallow
Sep-1999**



Predominant Fraction



0 ft 215 ft 430 ft

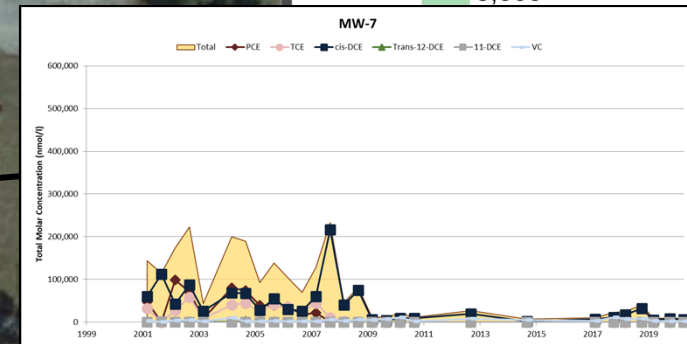
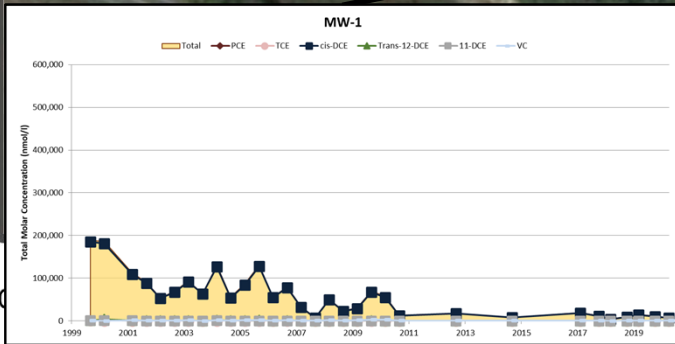
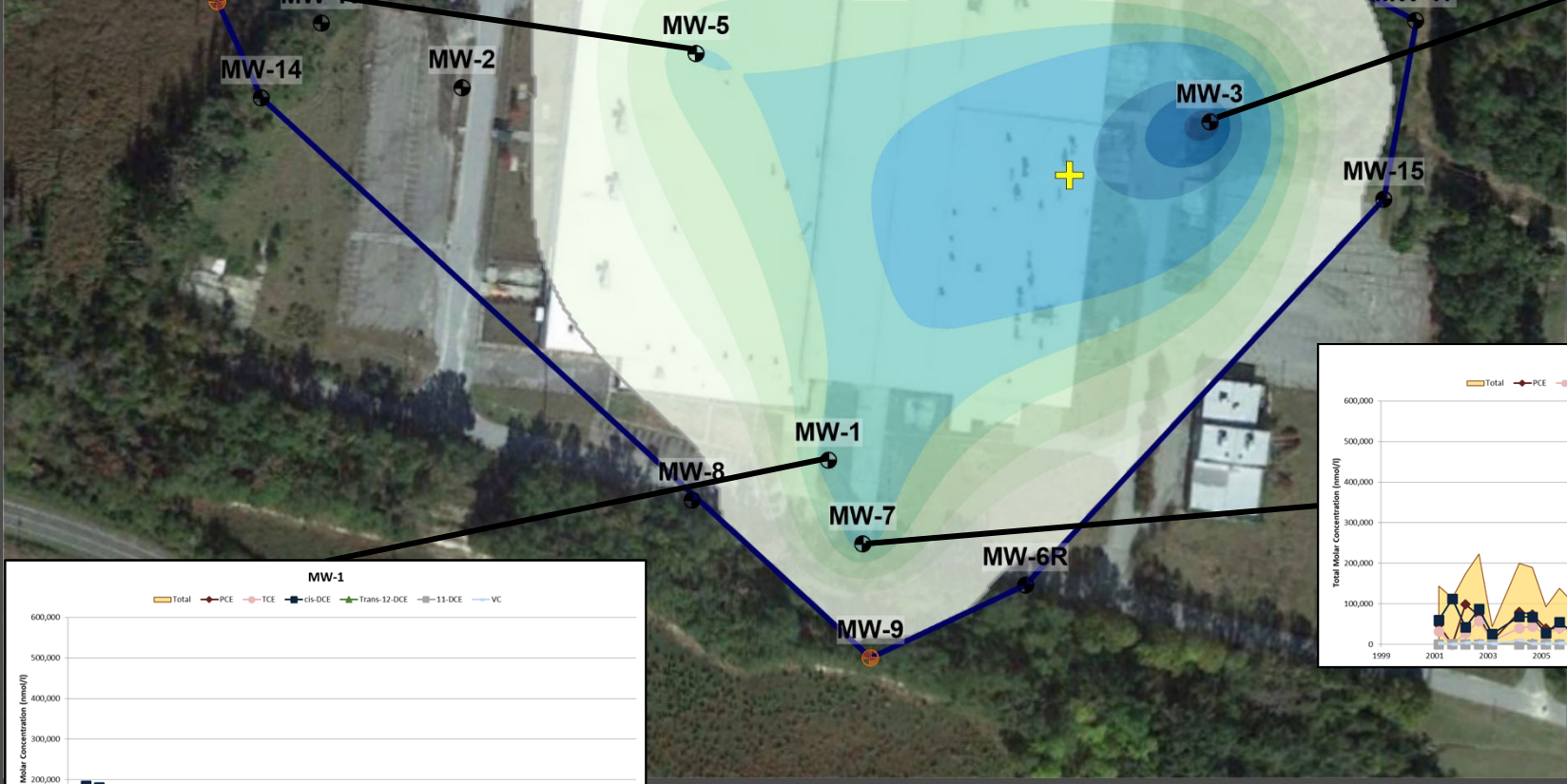
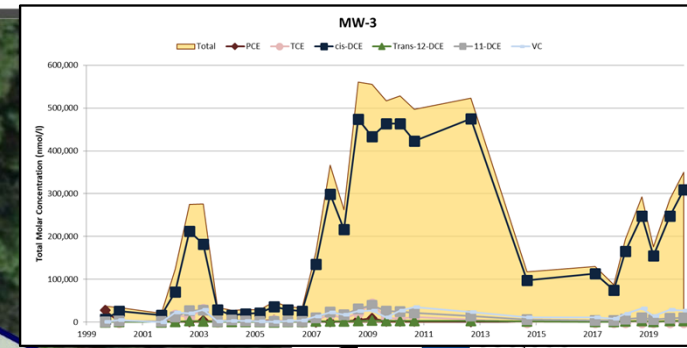
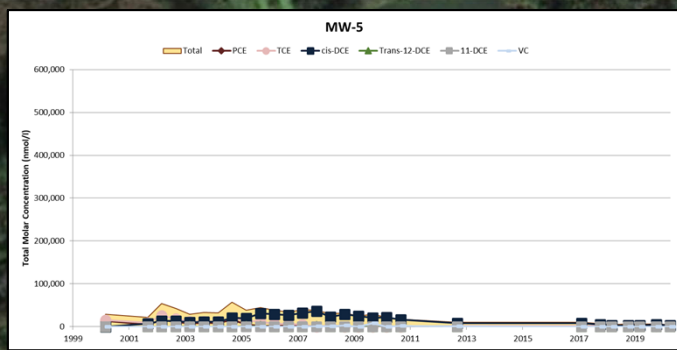
LEGEND

- MW-1 Monitoring Well
- MW-3 Hanging Well
- Plume Center of Mass

Plume Characteristics

Plume Area: **17.4 acres**
 Plume Average Concentration: **13,471 nmol/L**
 Plume Mass Indicator: **869 moles**

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Plume Characteristics

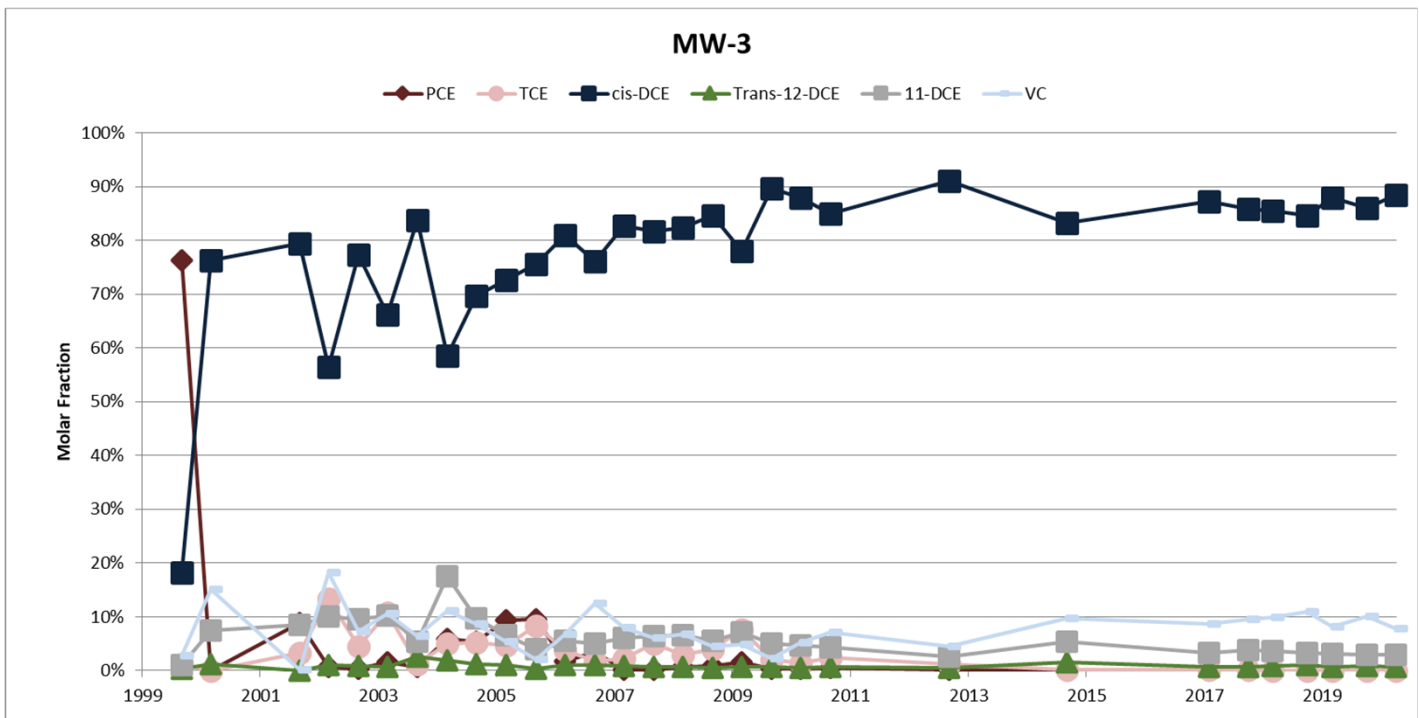
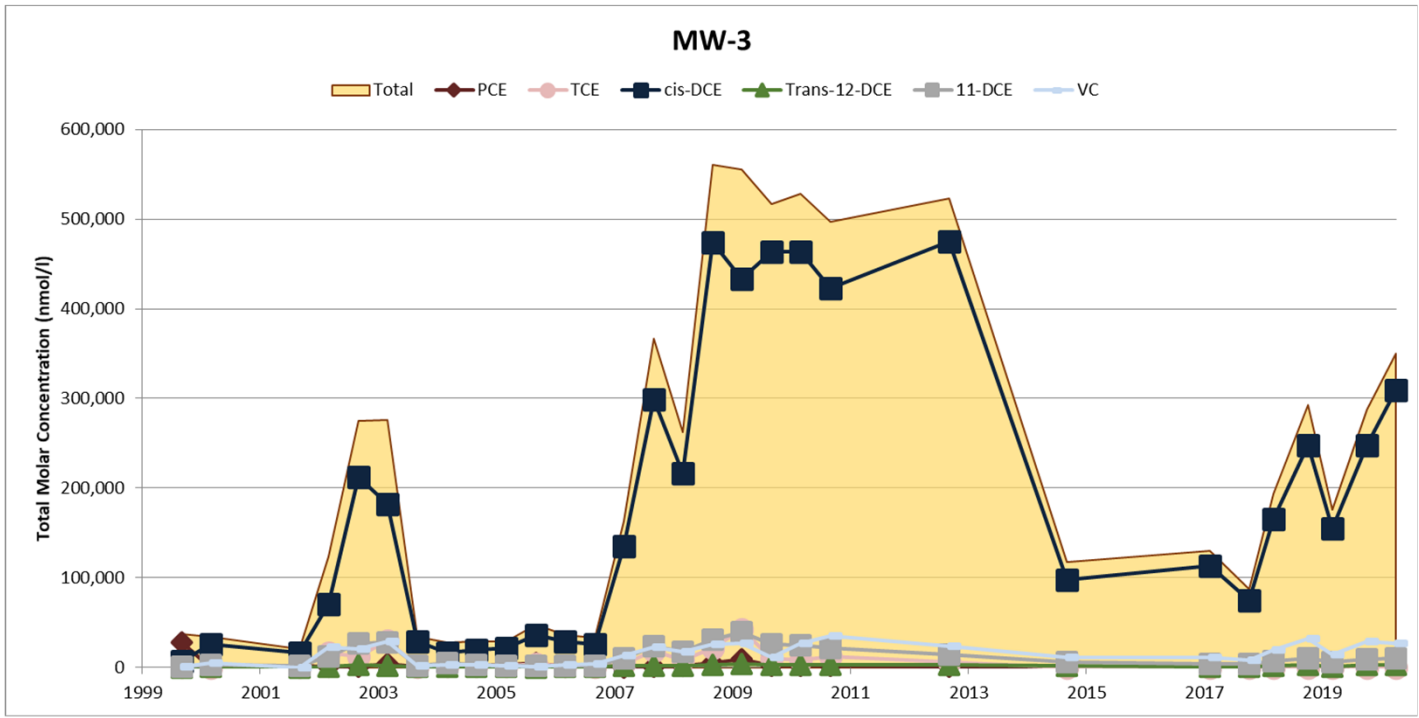
Plume Area: **16.1 acres**
 Plume Average Concentration: **7,472 nmol/L**
 Plume Mass Indicator: **444 moles**

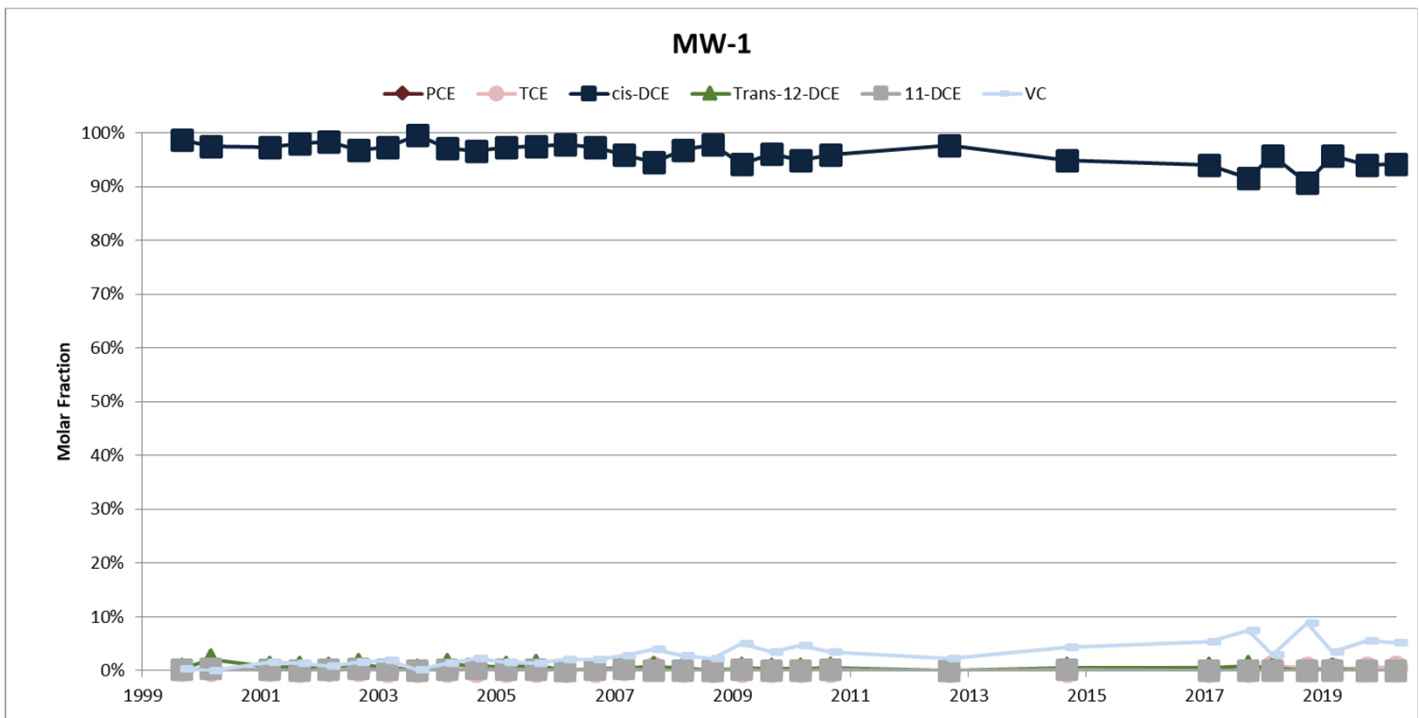
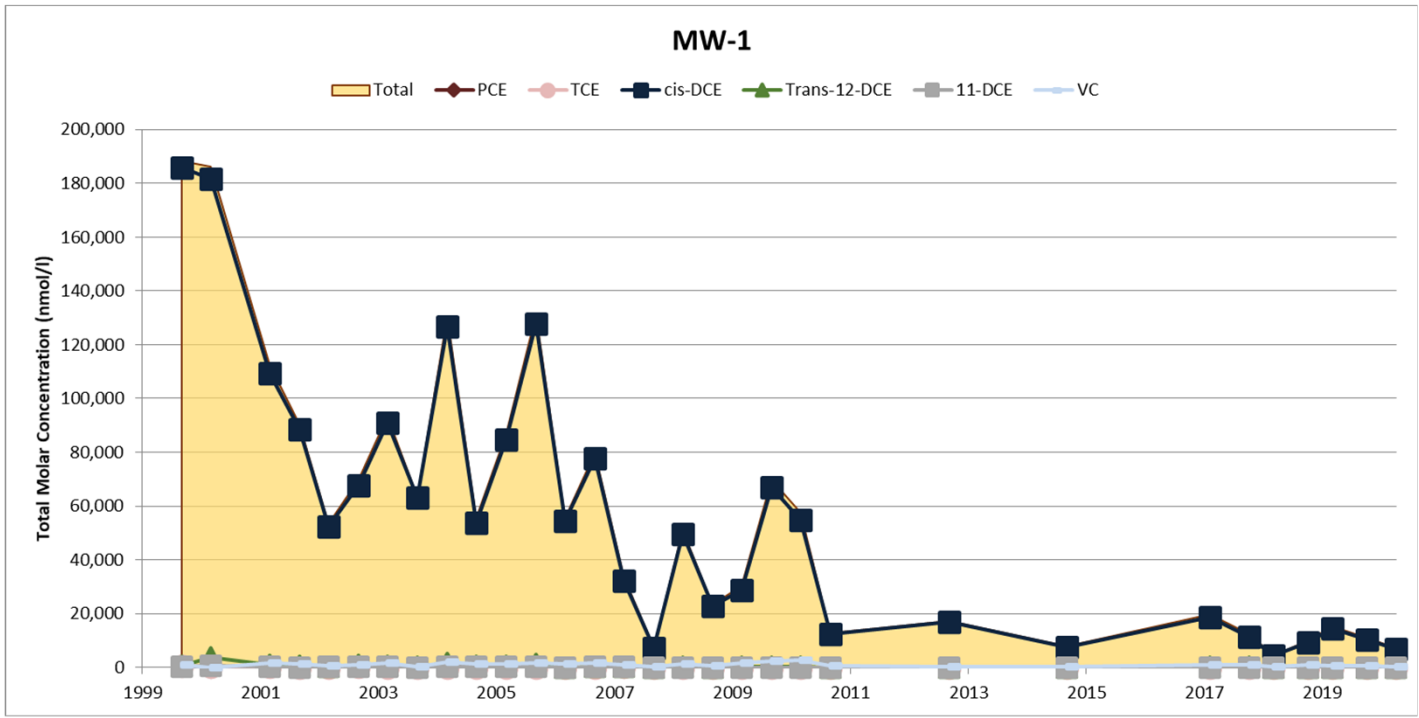
LEGEND

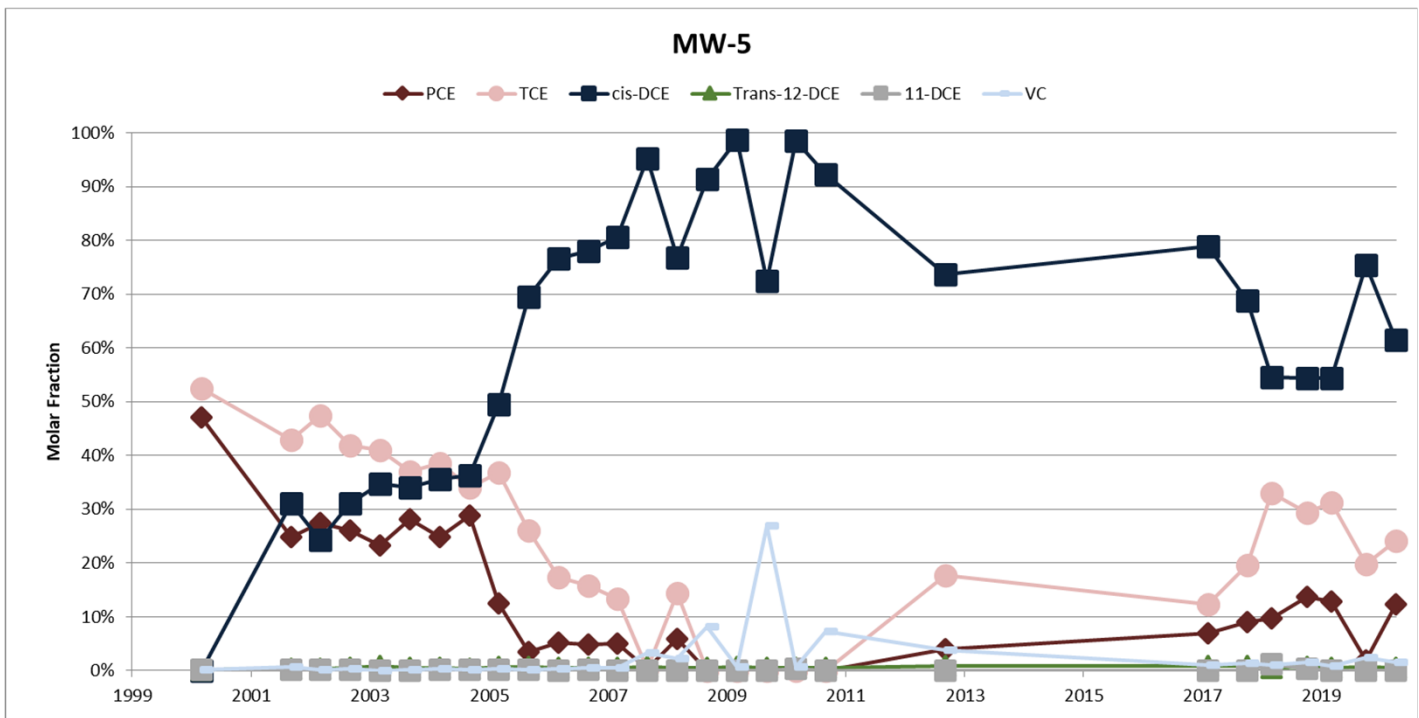
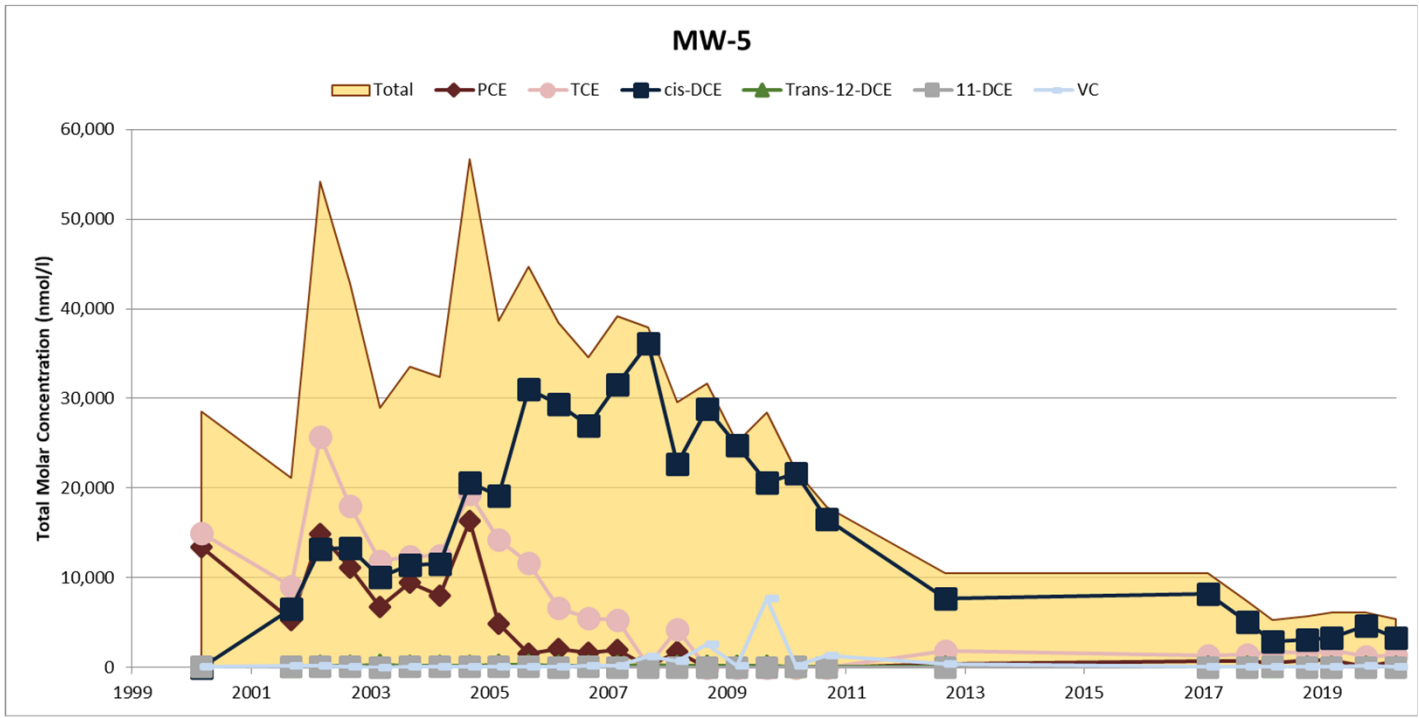
- MW-1 Monitoring Well
- MW-9 Hanging Well
- Plume Center of Mass

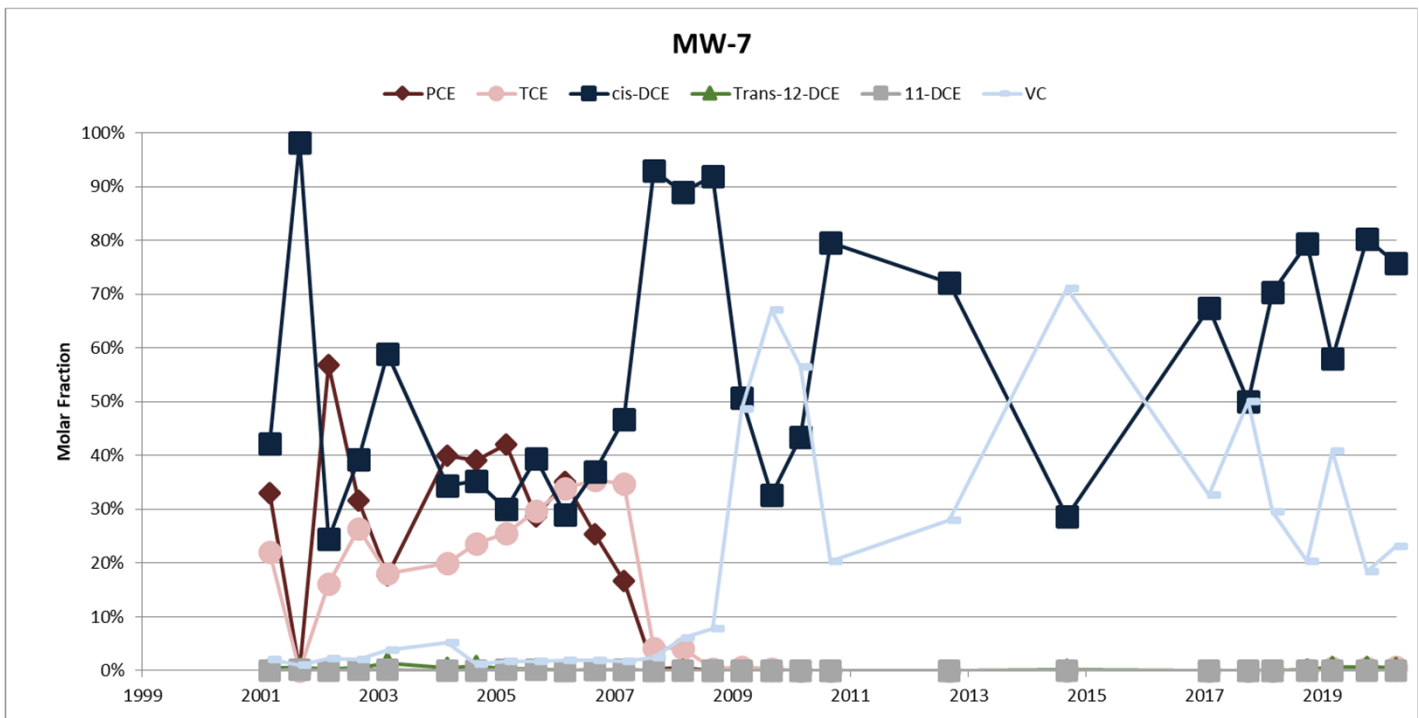
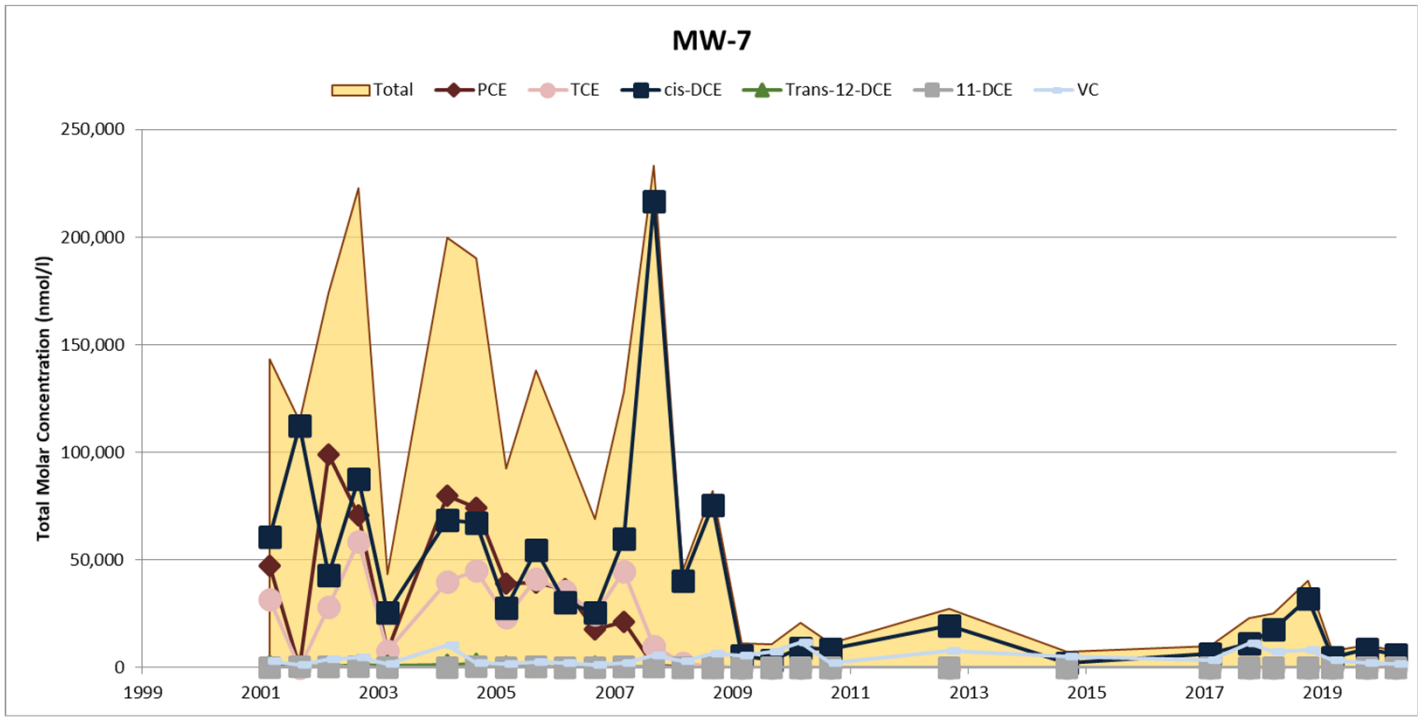
This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.





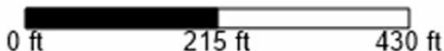
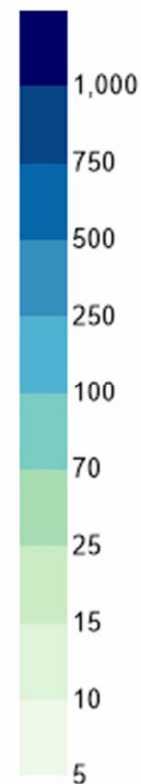






**1,1,2-TCA
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



LEGEND

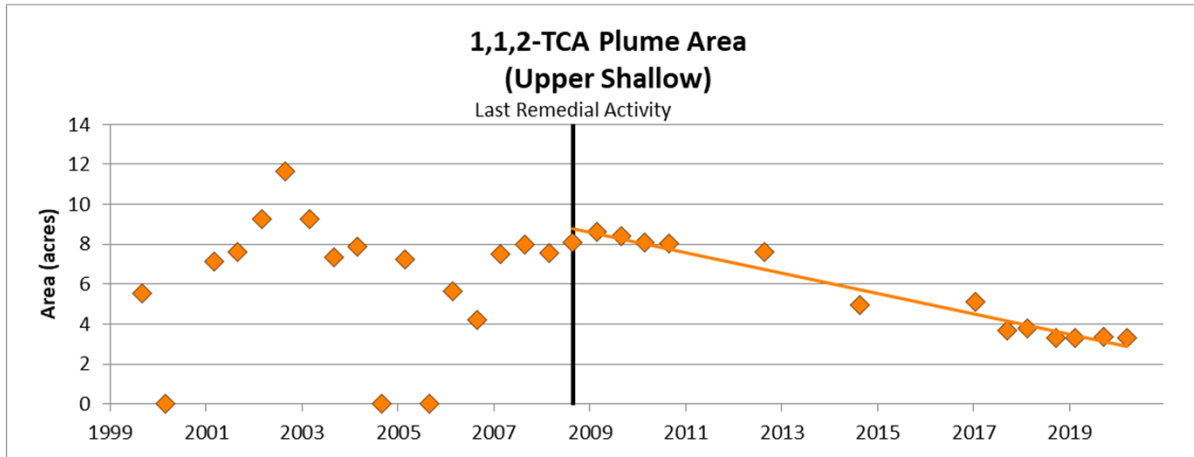
	Monitoring Well	
	Hanging Well	
112	Concentration ($\mu\text{g/L}$)	
NS (14)	Well Not Sampled (Assigned Value Shown)	
	Plume Center of Mass	

Plume Characteristics

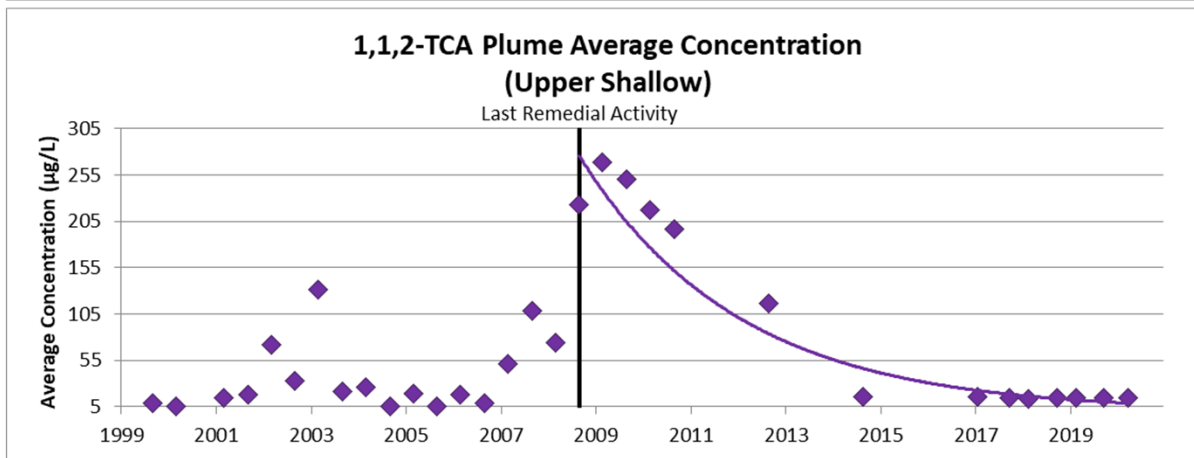
Plume Area: **5.6 acres**
 Plume Average Concentration: **8.3 $\mu\text{g/L}$**
 Plume Mass Indicator: **0.38 lbs**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

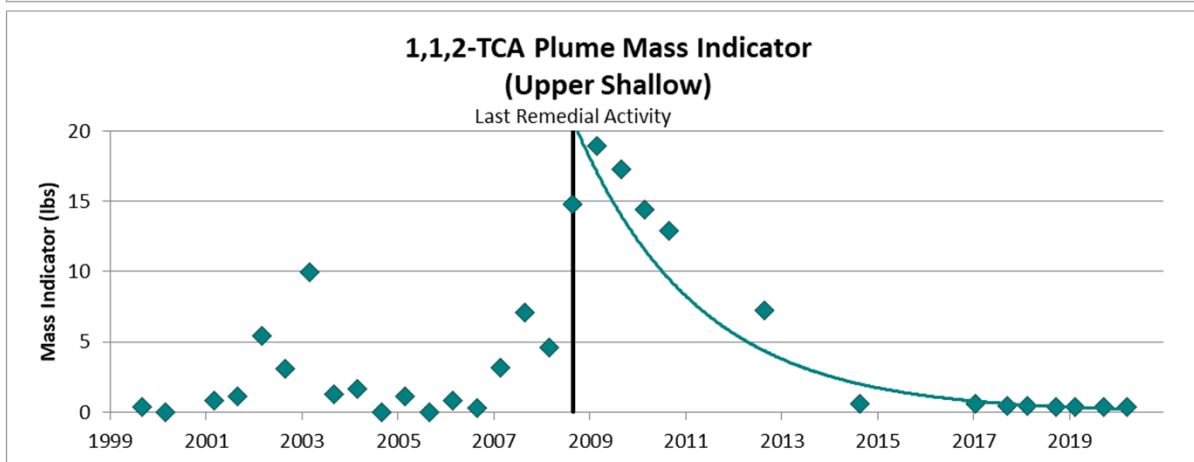




Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



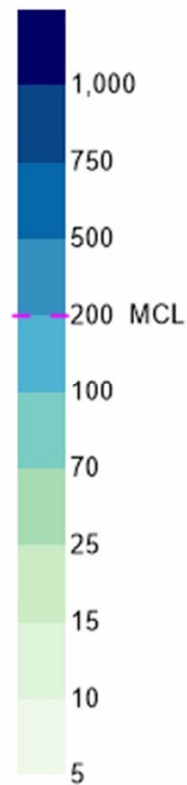
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence

**1,1,1-TCA
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



0 ft 215 ft 430 ft

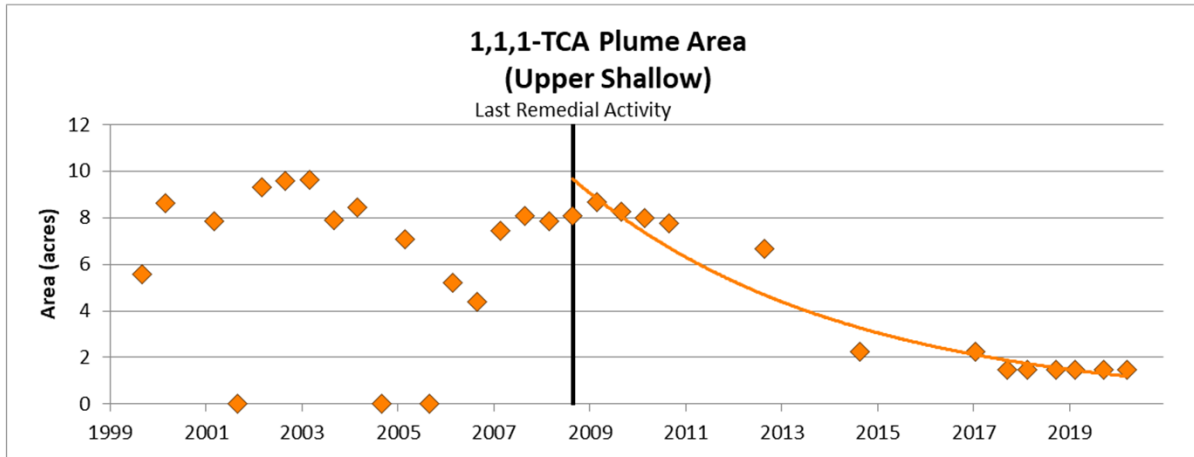
LEGEND

- MW-1 Monitoring Well
- MW-9 Hanging Well
- 112 Concentration ($\mu\text{g/L}$)
- NS (145) Well Not Sampled (Assigned Value Shown)
- Plume Center of Mass
- MCL

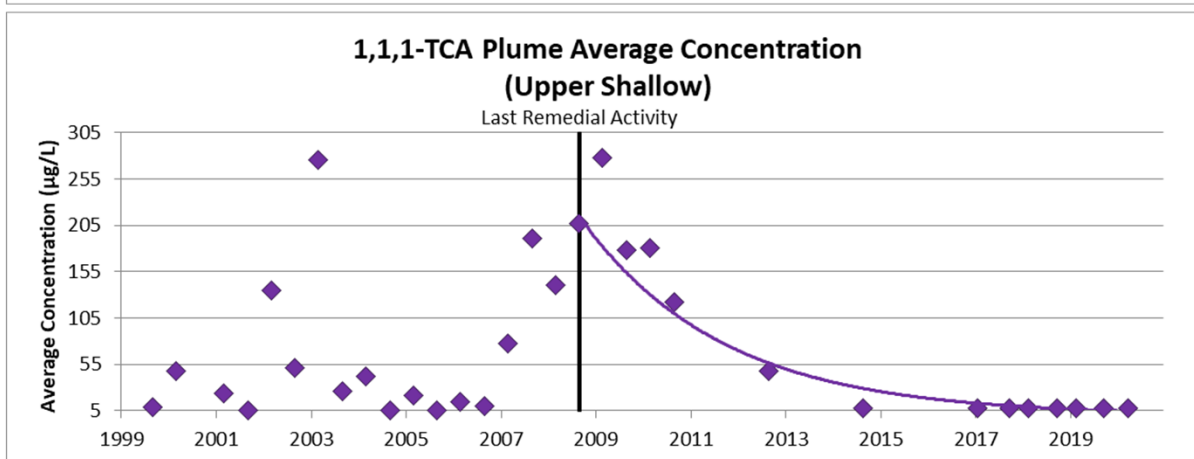
Plume Characteristics

Plume Area: **5.6 acres**
 Plume Average Concentration: **8.3 $\mu\text{g/L}$**
 Plume Mass Indicator: **0.38 lbs**

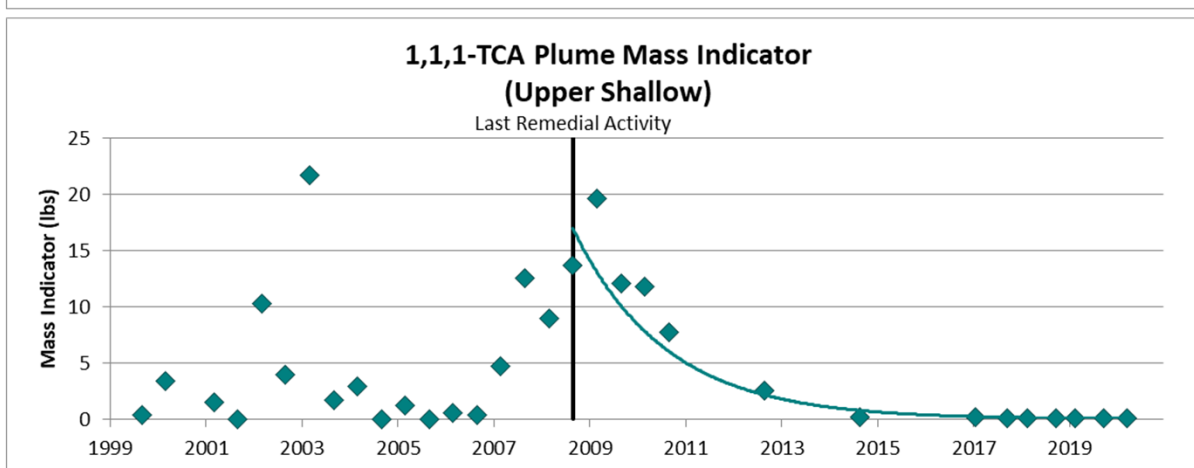
This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.



Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



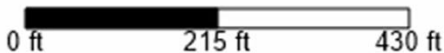
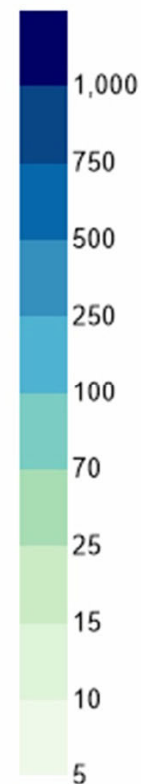
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence

**1,2-DCA
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



LEGEND

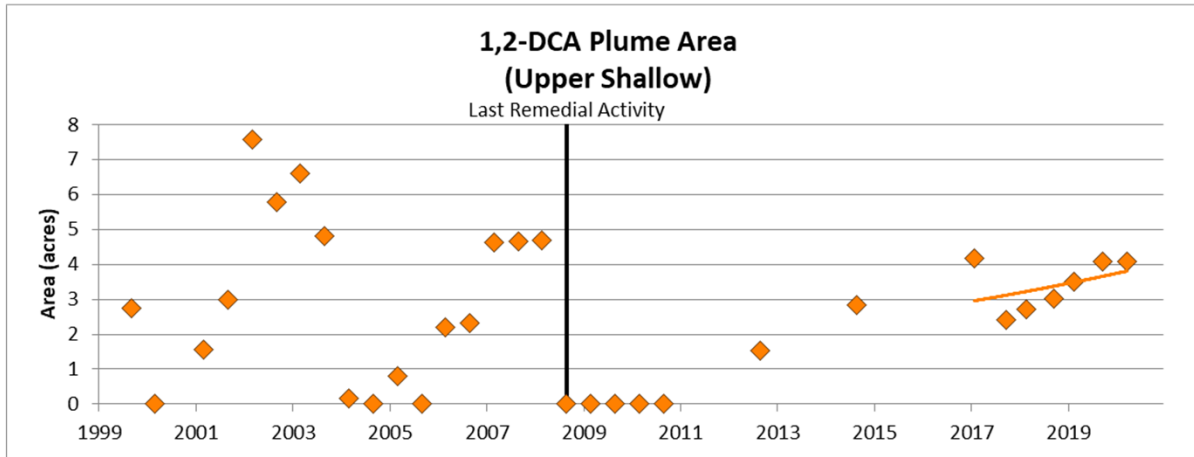
	Monitoring Well	
	Hanging Well	
112	Concentration ($\mu\text{g/L}$)	
NS (140)	Well Not Sampled (Assigned Value Shown)	
	Plume Center of Mass	

Plume Characteristics

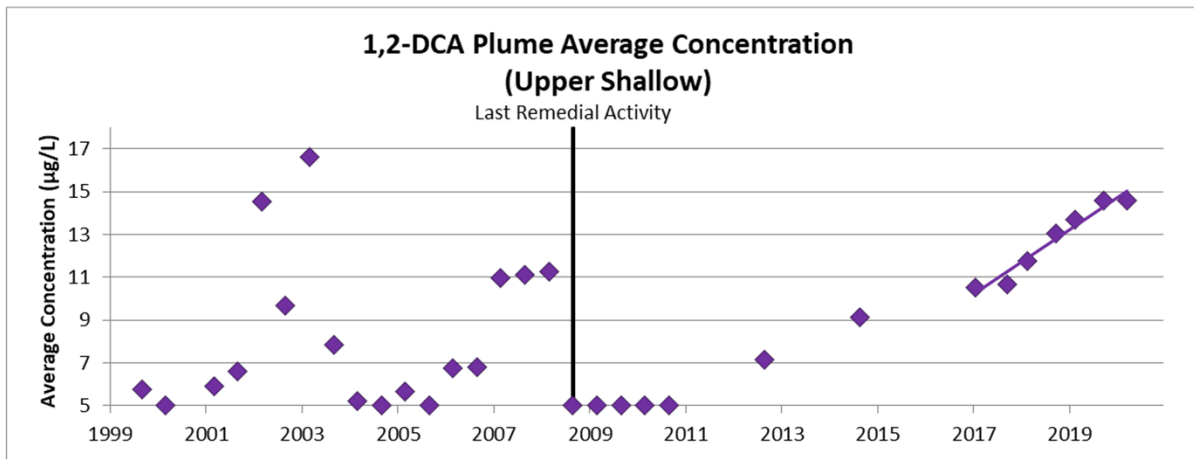
Plume Area: **2.7 acres**
 Plume Average Concentration: **5.8 $\mu\text{g/L}$**
 Plume Mass Indicator: **0.13 lbs**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

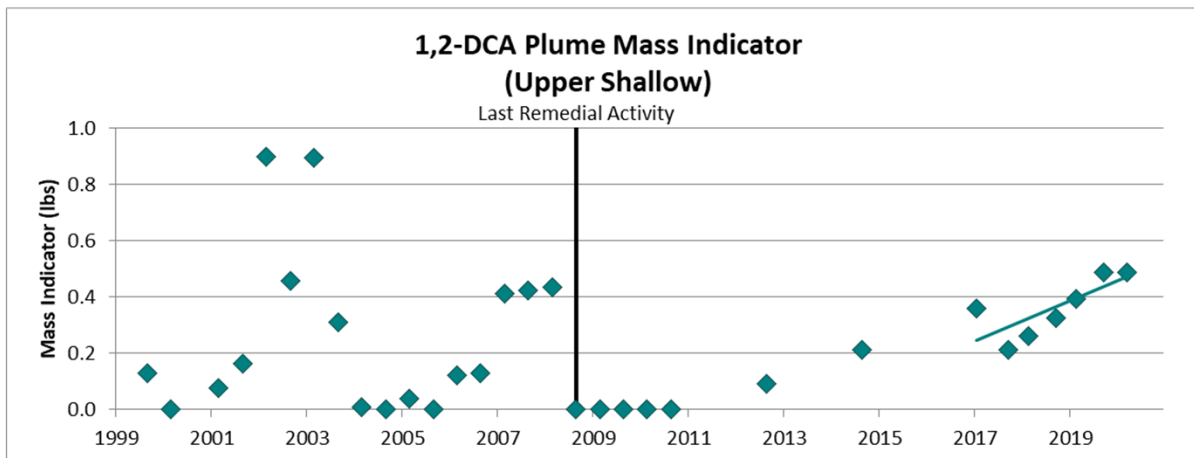




Feb-2017 to Apr-2020
 No Trend/Increasing Trend
 Mann-Kendall: >99% Confidence
 Regression: 64% Confidence



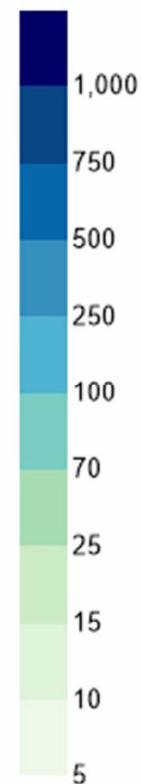
Feb-2017 to Apr-2020
 Increasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2020
 Increasing Trend
 Mann-Kendall: >99% Confidence
 Regression: 95% Confidence

**1,1-DCA
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



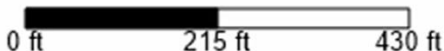
Plume Characteristics

Plume Area: **8.4 acres**
 Plume Average Concentration: **23.2 $\mu\text{g/L}$**
 Plume Mass Indicator: **1.6 lbs**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

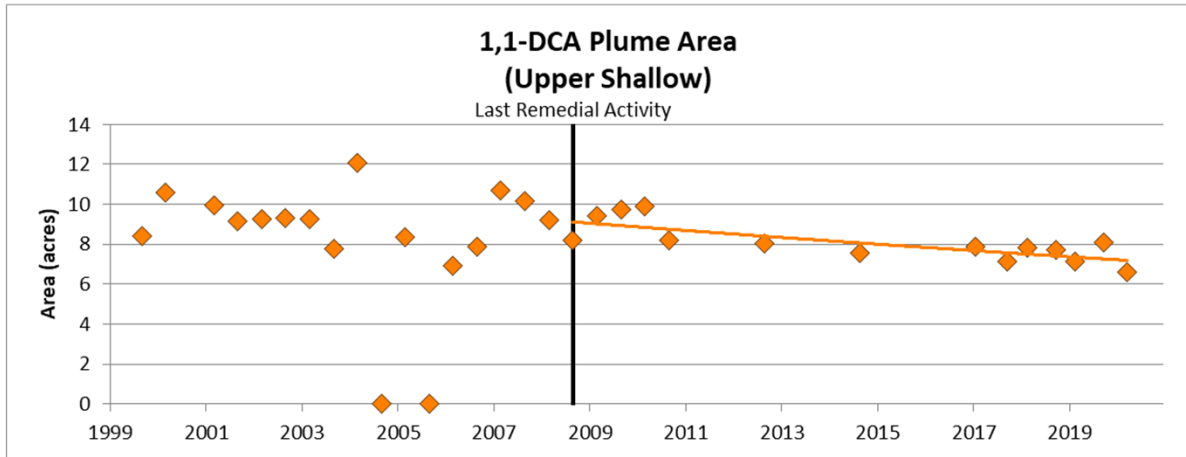


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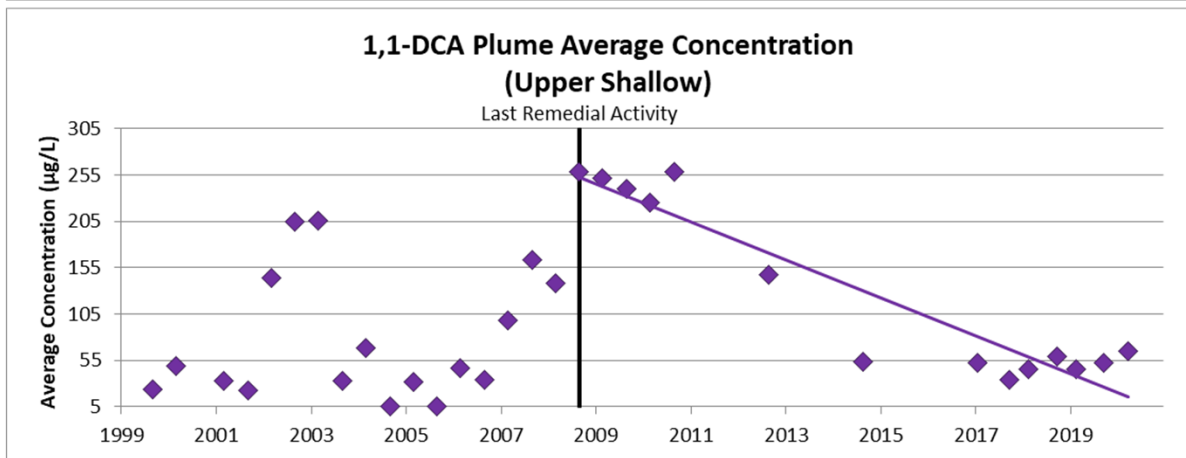


LEGEND

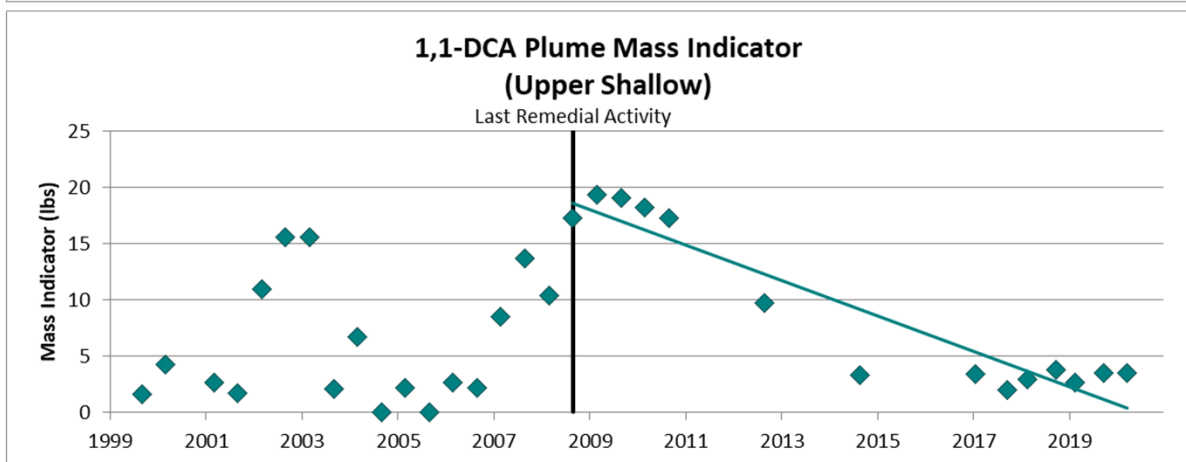
- MW-1 Monitoring Well
- MW-3 Hanging Well
- 112 Concentration ($\mu\text{g/L}$)
- NS (149) Well Not Sampled (Assigned Value Shown)
- Plume Center of Mass



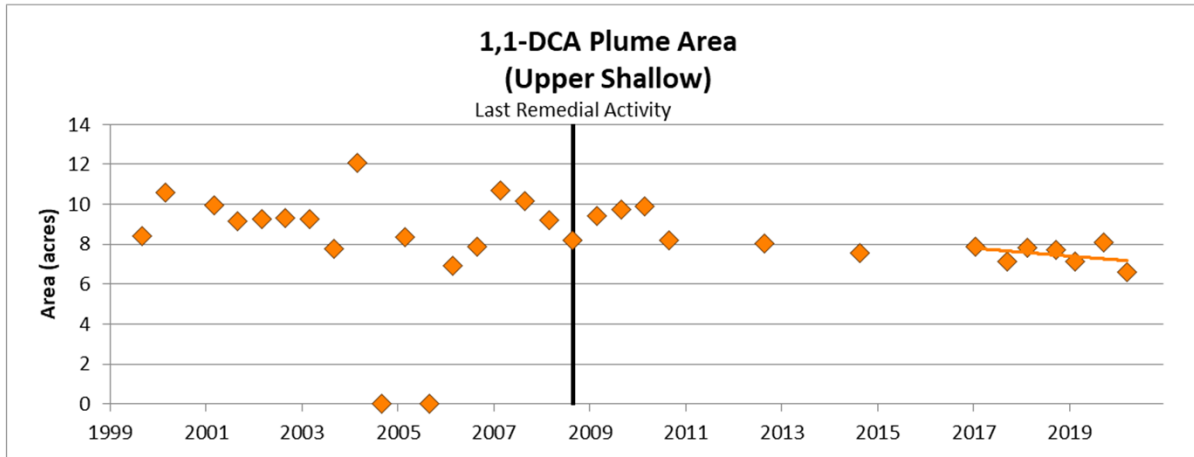
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



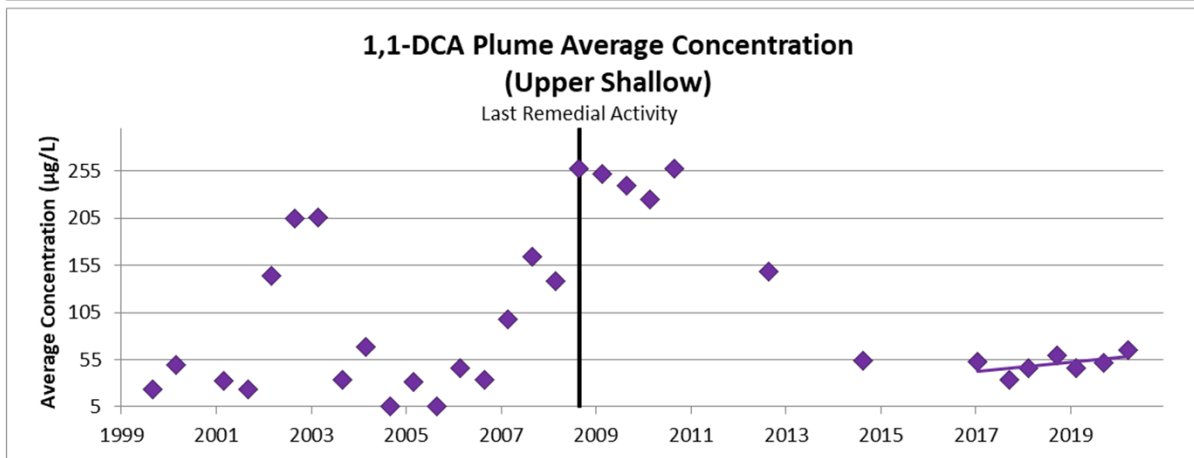
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



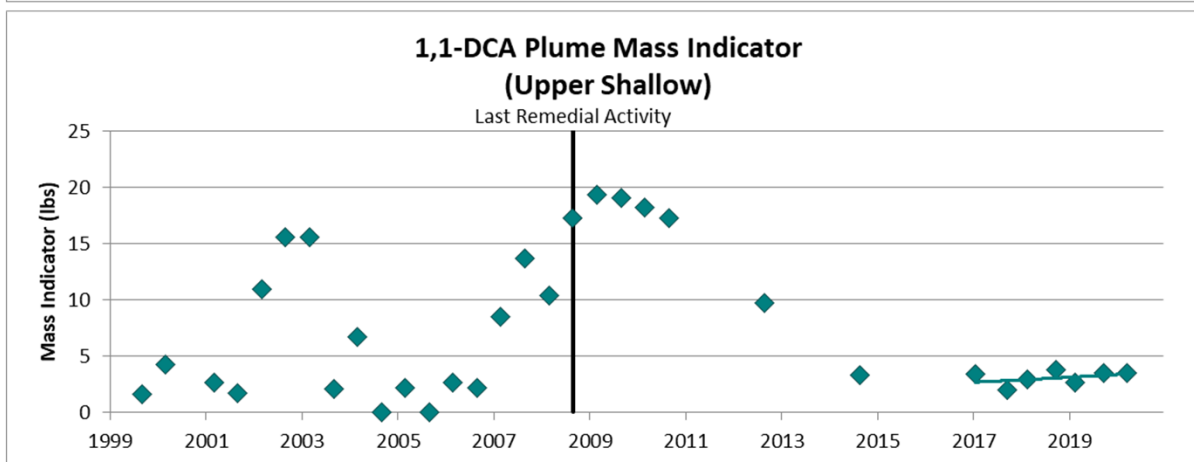
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: 99% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 81% Confidence
 Regression: 62% Confidence



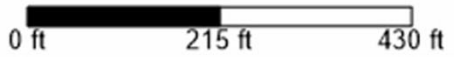
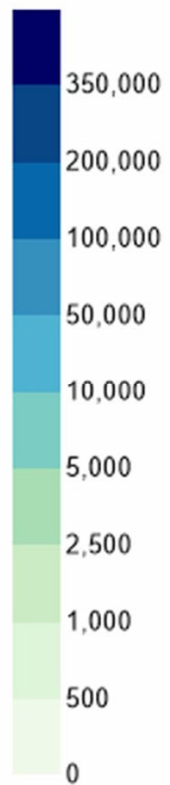
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 81% Confidence
 Regression: 80% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 81% Confidence
 Regression: 60% Confidence

**Total Chloroethanes
Upper Shallow
Sep-1999**

Concentration (nmol/L)



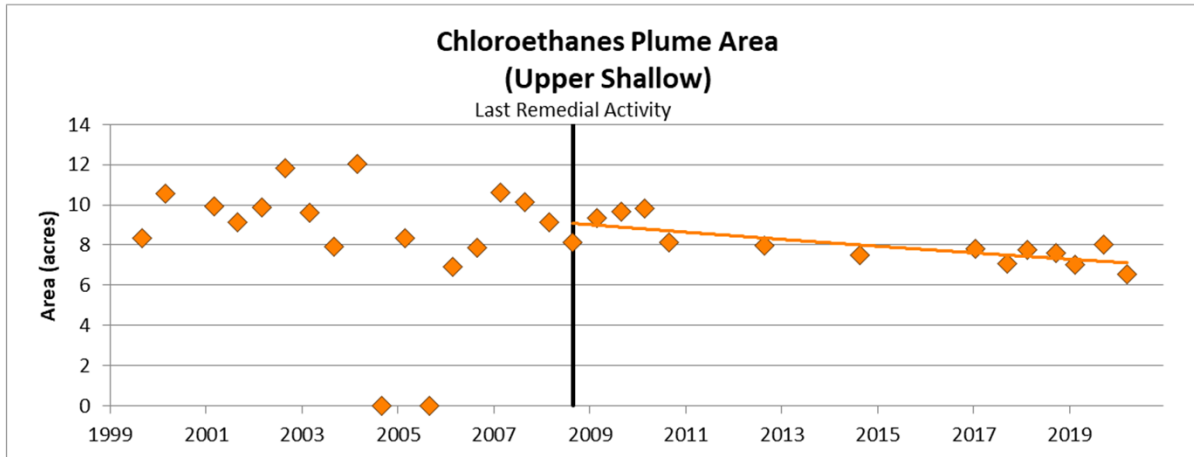
LEGEND

- MW-1 Monitoring Well
- MW-3 Hanging Well
- Plume Center of Mass

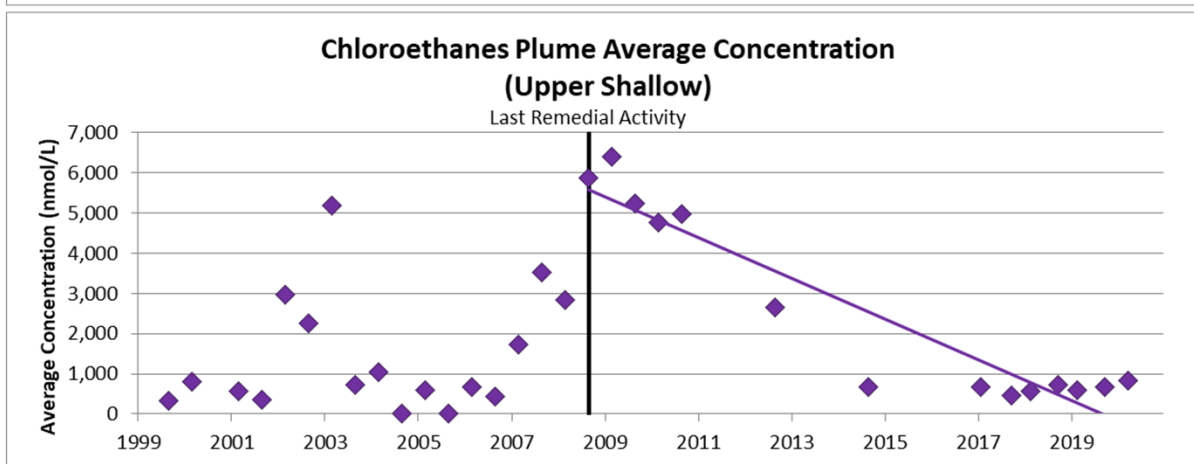
Plume Characteristics

Plume Area: **8.4 acres**
 Plume Average Concentration: **339 nmol/L**
 Plume Mass Indicator: **10.5 moles**

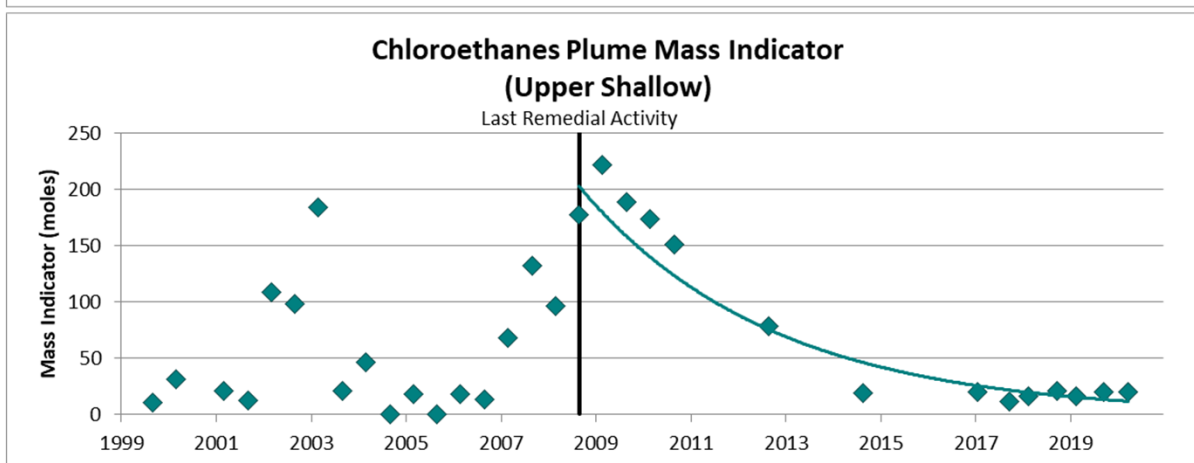
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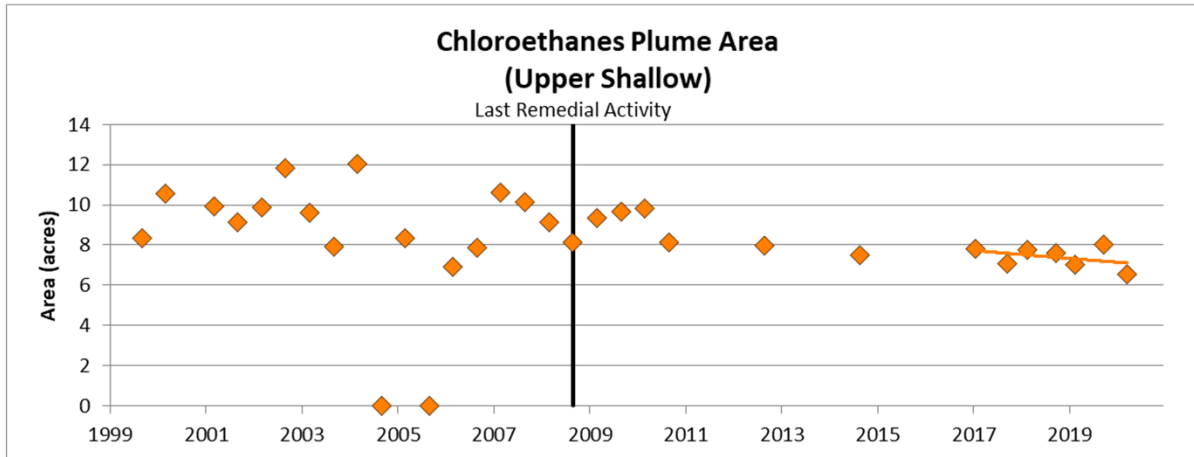
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



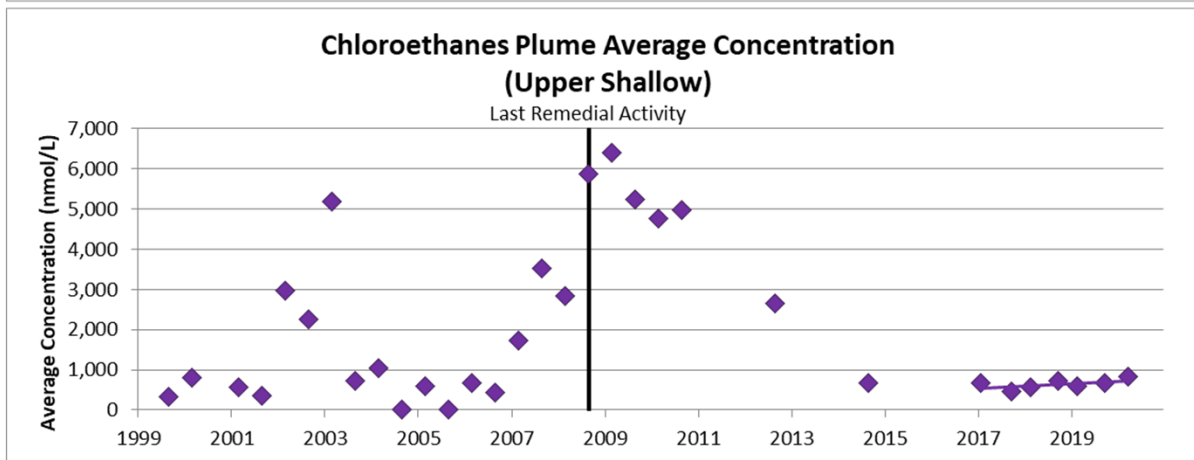
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



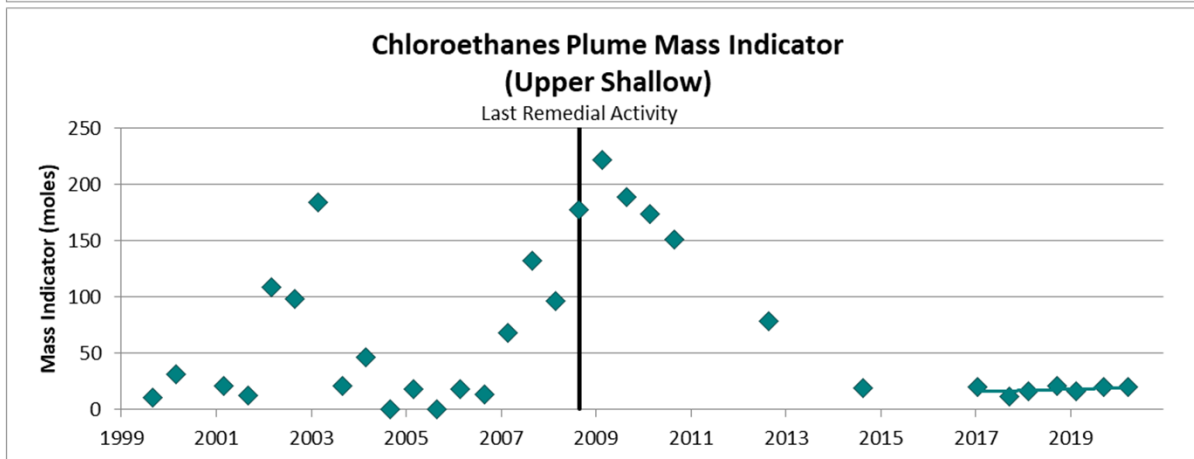
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: >99% Confidence
 Regression: >99% Confidence



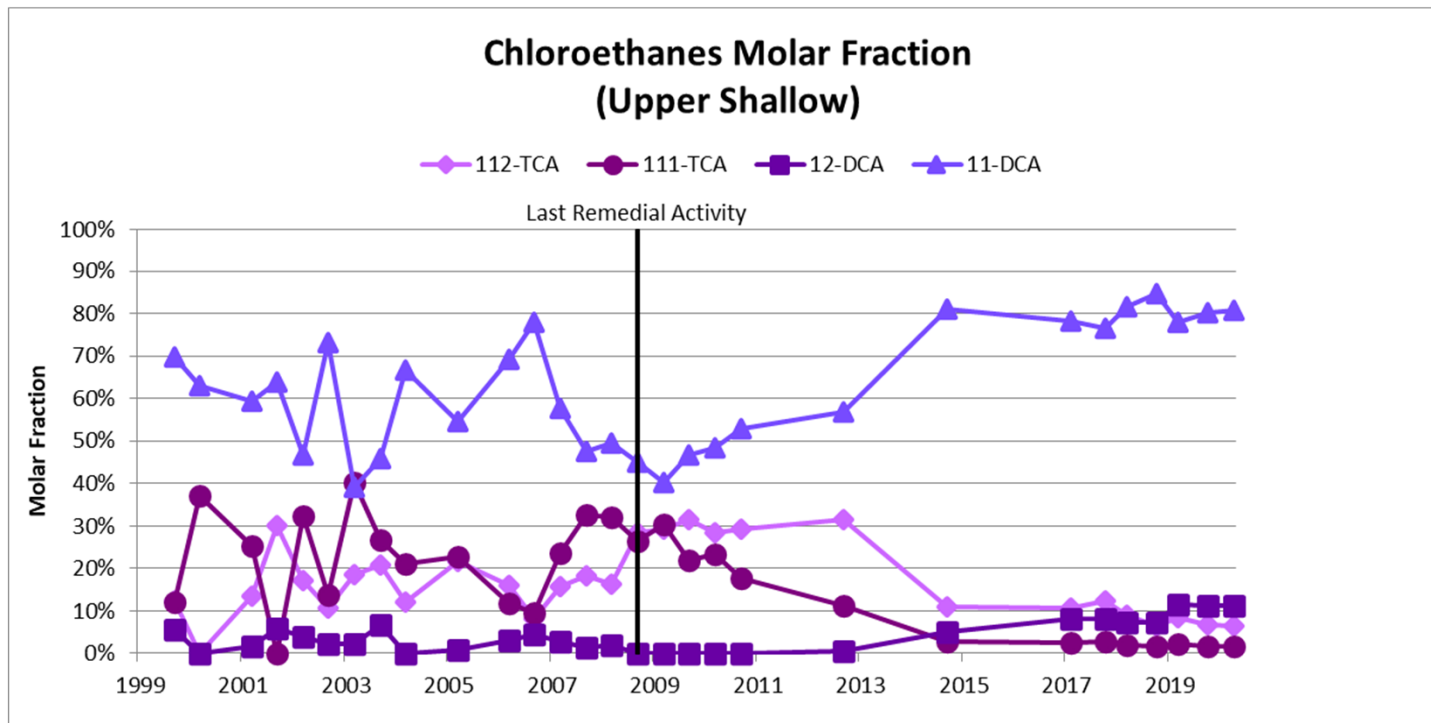
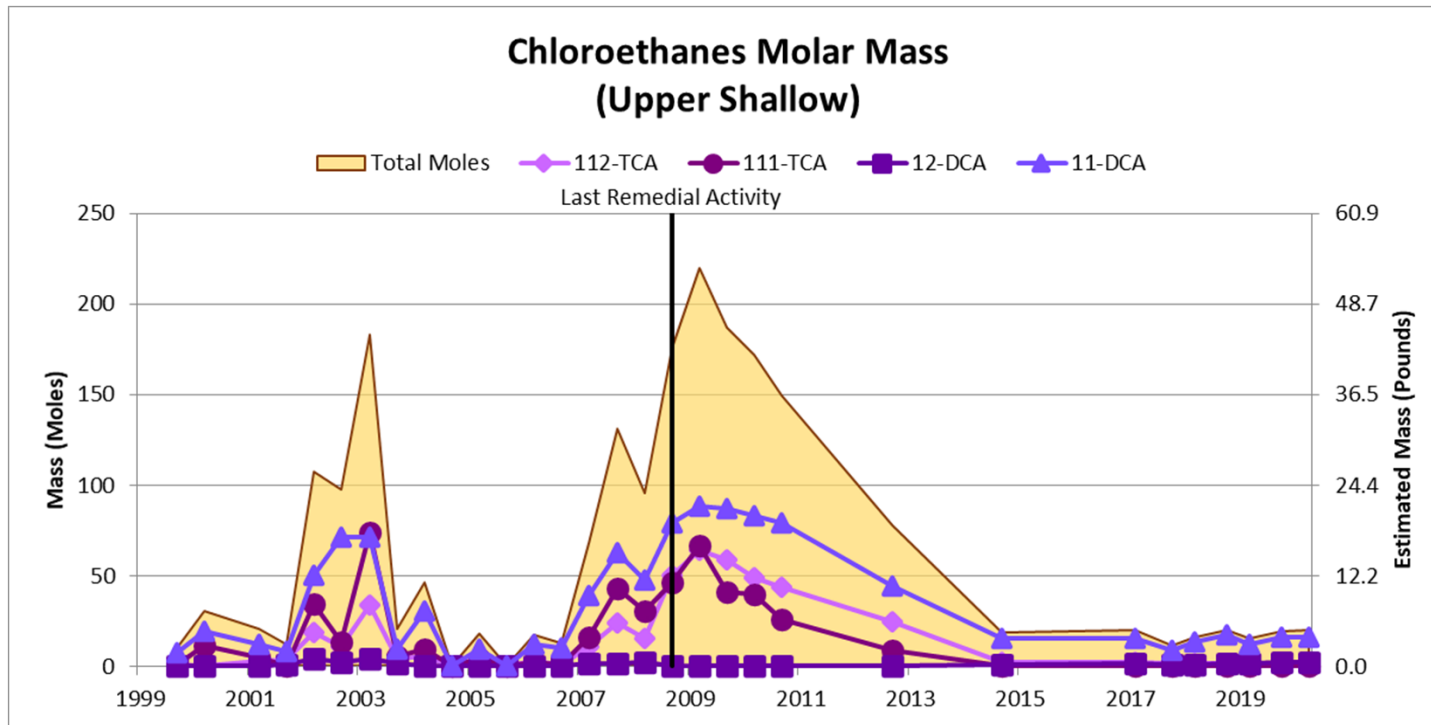
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 81% Confidence
 Regression: 62% Confidence



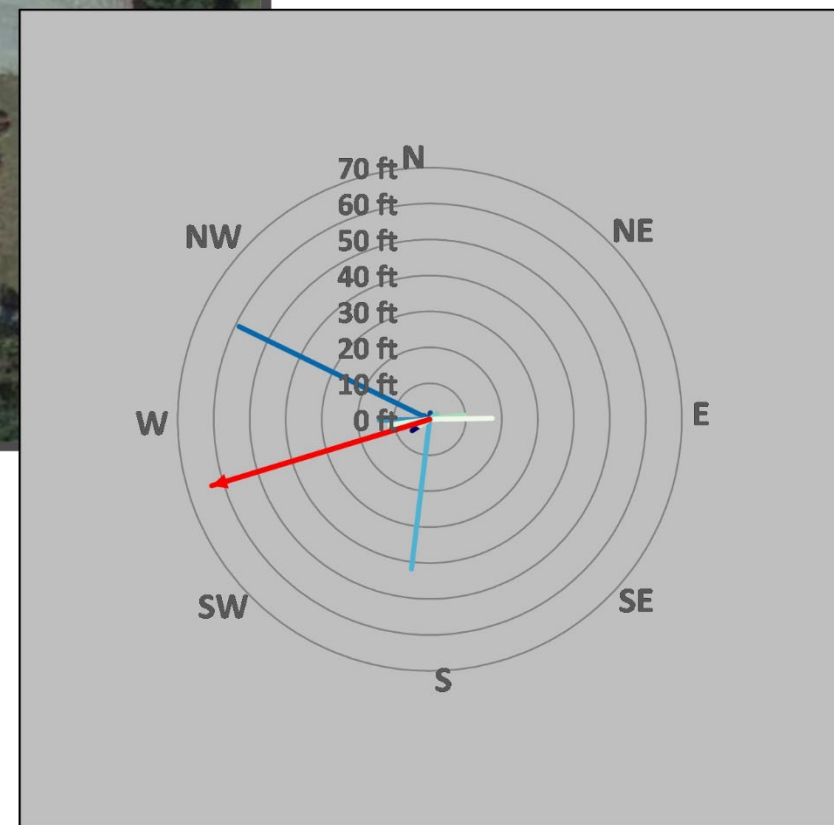
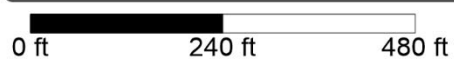
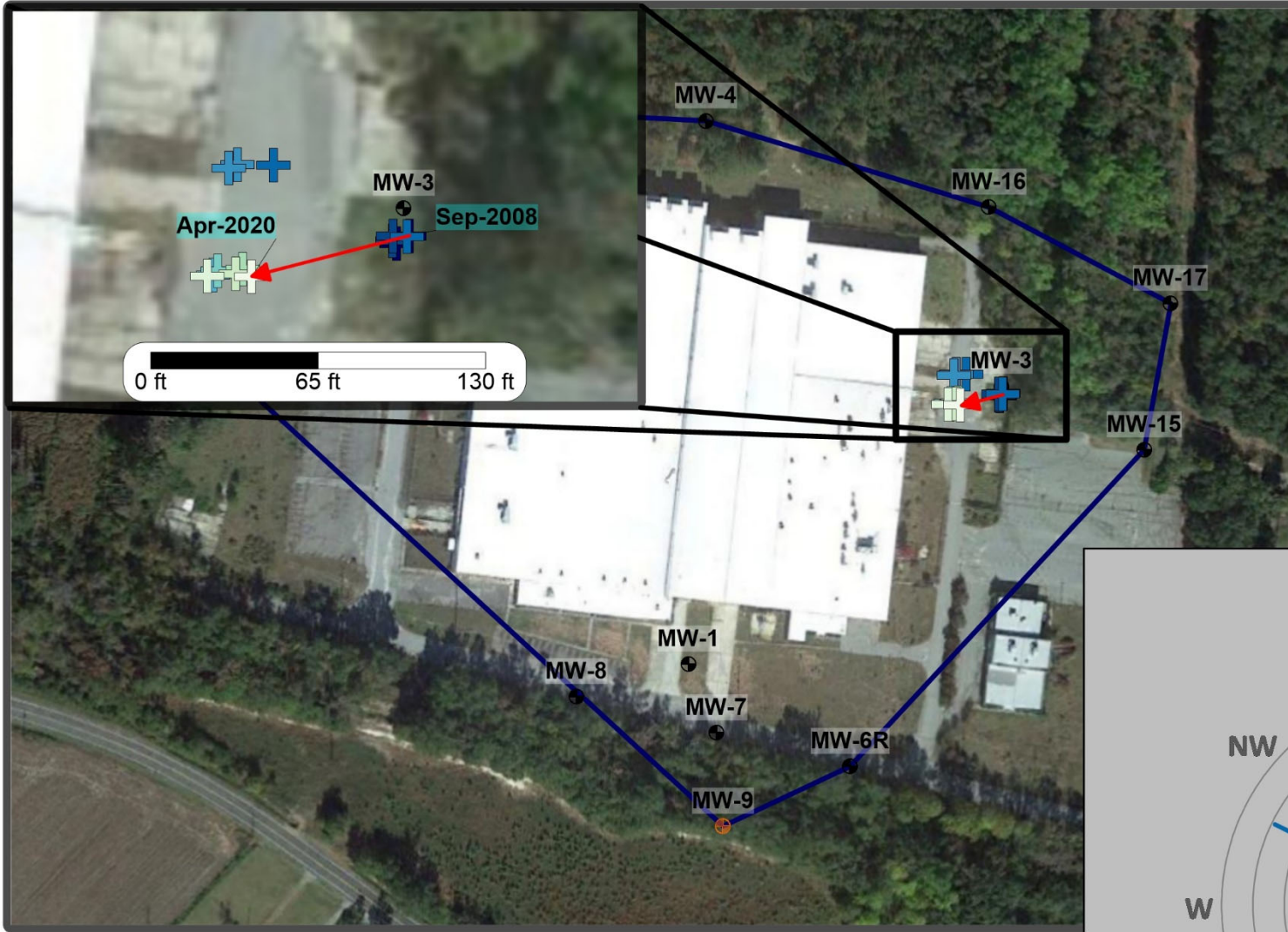
Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 88% Confidence
 Regression: 80% Confidence



Feb-2017 to Apr-2020
 No Trend
 Mann-Kendall: 72% Confidence
 Regression: 58% Confidence

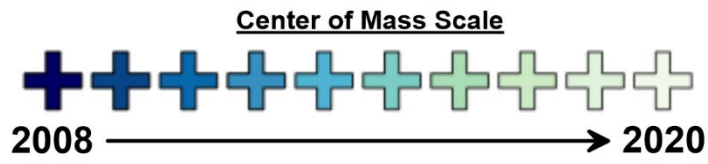


**Chloroethanes
Upper Shallow
Center of Mass**



LEGEND

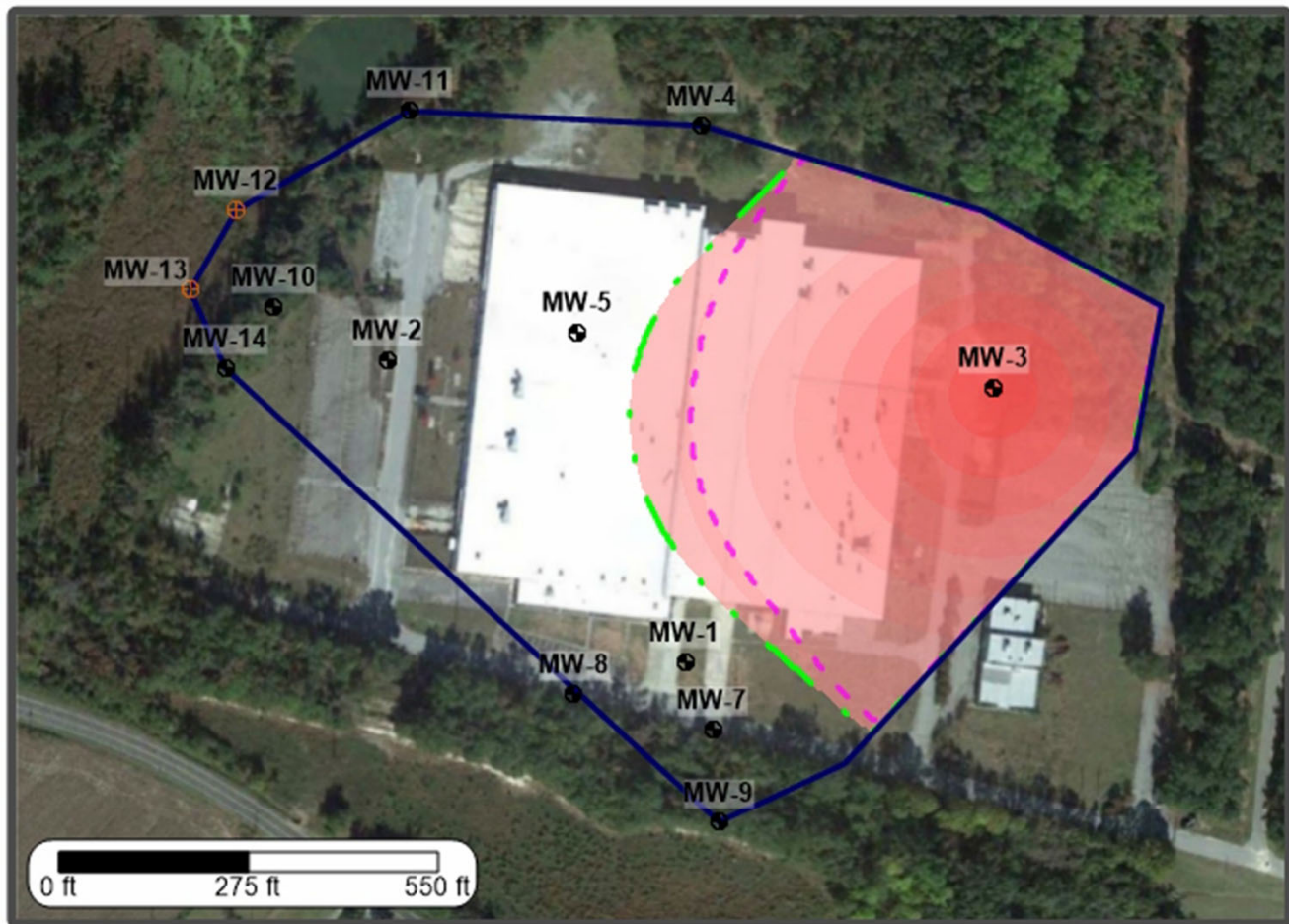
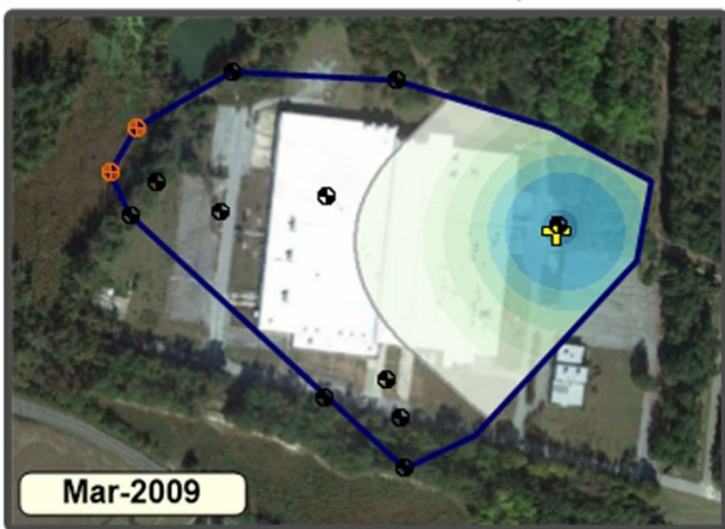
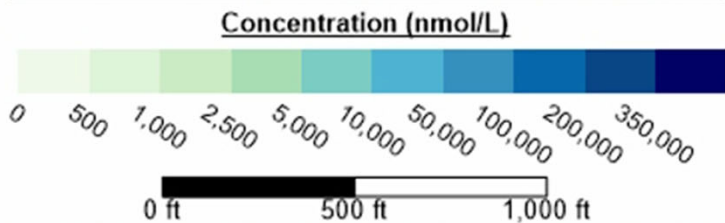
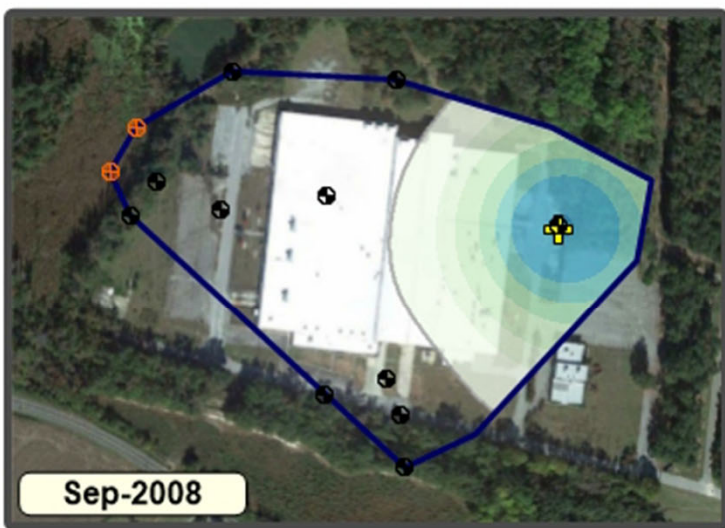
- MW-4 Monitoring Well
- MW-5 Hanging Well
- Center of Mass Movement
- Net Movement



This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Chloroethanes
Upper Shallow**

Plume Differences Sep-2008 vs Mar-2009



US Pat. No. 10,400,583



LEGEND

- MW-4 Monitoring Well
- MW-5 Hanging Well
- Plume Center of Mass
- Sep-2008 Plume Boundary
- Mar-2009 Plume Boundary

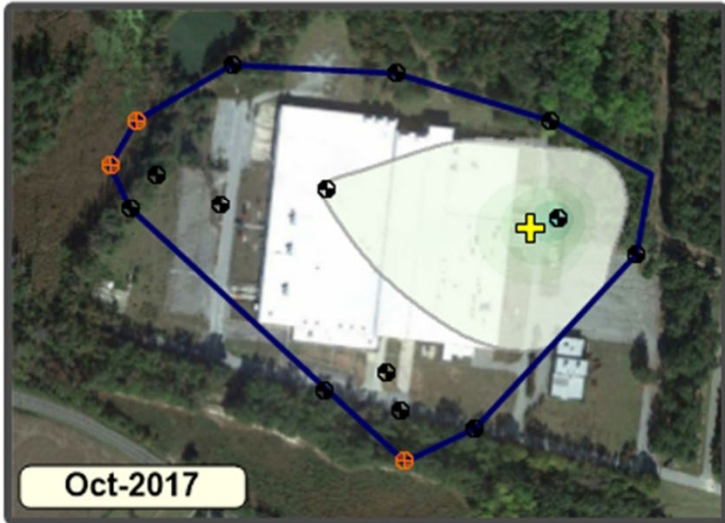
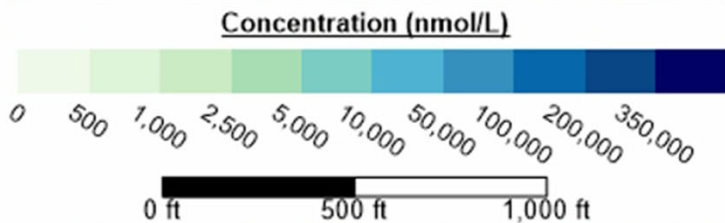
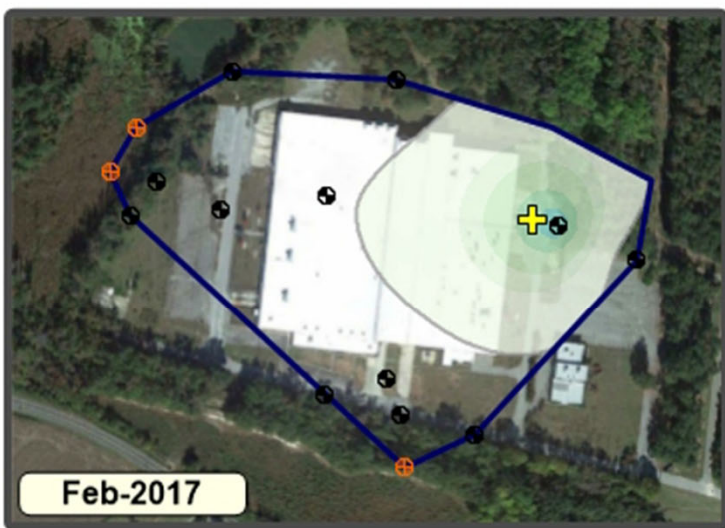
Plume Characteristics

- Area: **15% Increase**
- Average Concentration: **9% Increase**
- Mass Indicator: **25% Increase**
- Mass Increase: **43.8 moles Increase**
- Mass Decrease: **0.00 moles Decrease**

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**Chloroethanes
Upper Shallow**

Plume Differences Feb-2017 vs Oct-2017

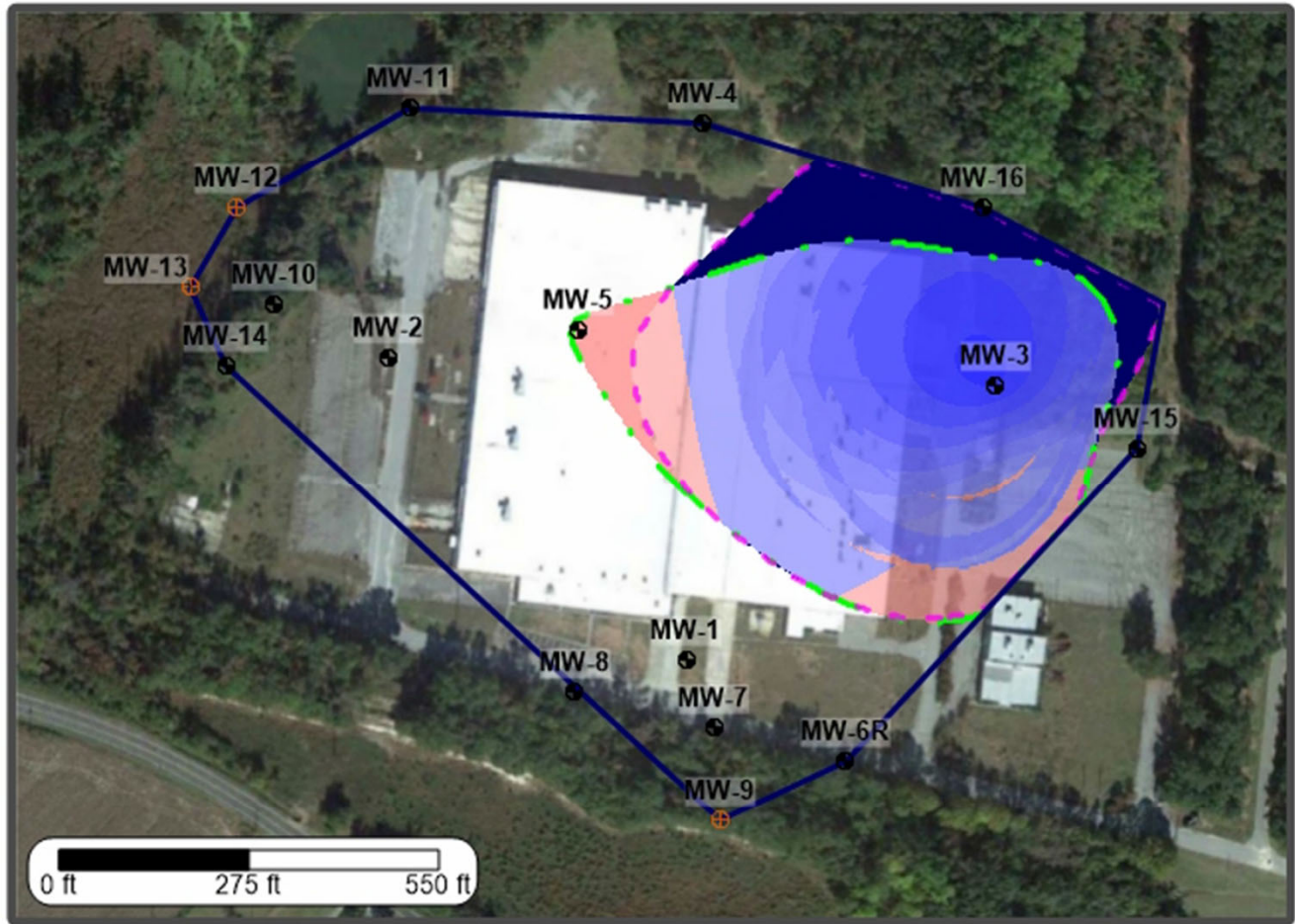


LEGEND

- MW-4 Monitoring Well
- MW-5 Hanging Well
- Plume Center of Mass
- Feb-2017 Plume Boundary
- Oct-2017 Plume Boundary

Plume Characteristics

- Area: **10% Decrease**
- Average Concentration: **34% Decrease**
- Mass Indicator: **41% Decrease**
- Mass Increase: **0.01 moles Increase**
- Mass Decrease: **7.31 moles Decrease**



US Pat. No. 10,400,583

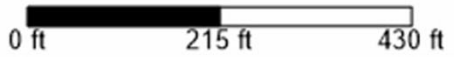
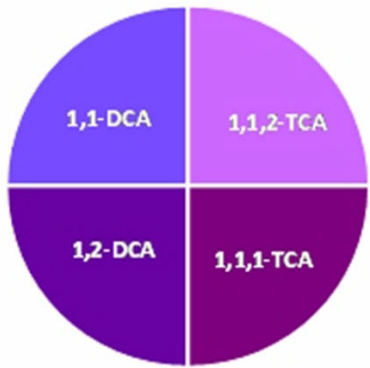


This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Total Chloroethanes
Upper Shallow
Sep-1999**



Predominant Fraction



LEGEND

- MW-1 Monitoring Well
- MW-3 Hanging Well
- Plume Center of Mass

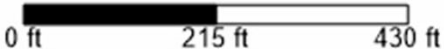
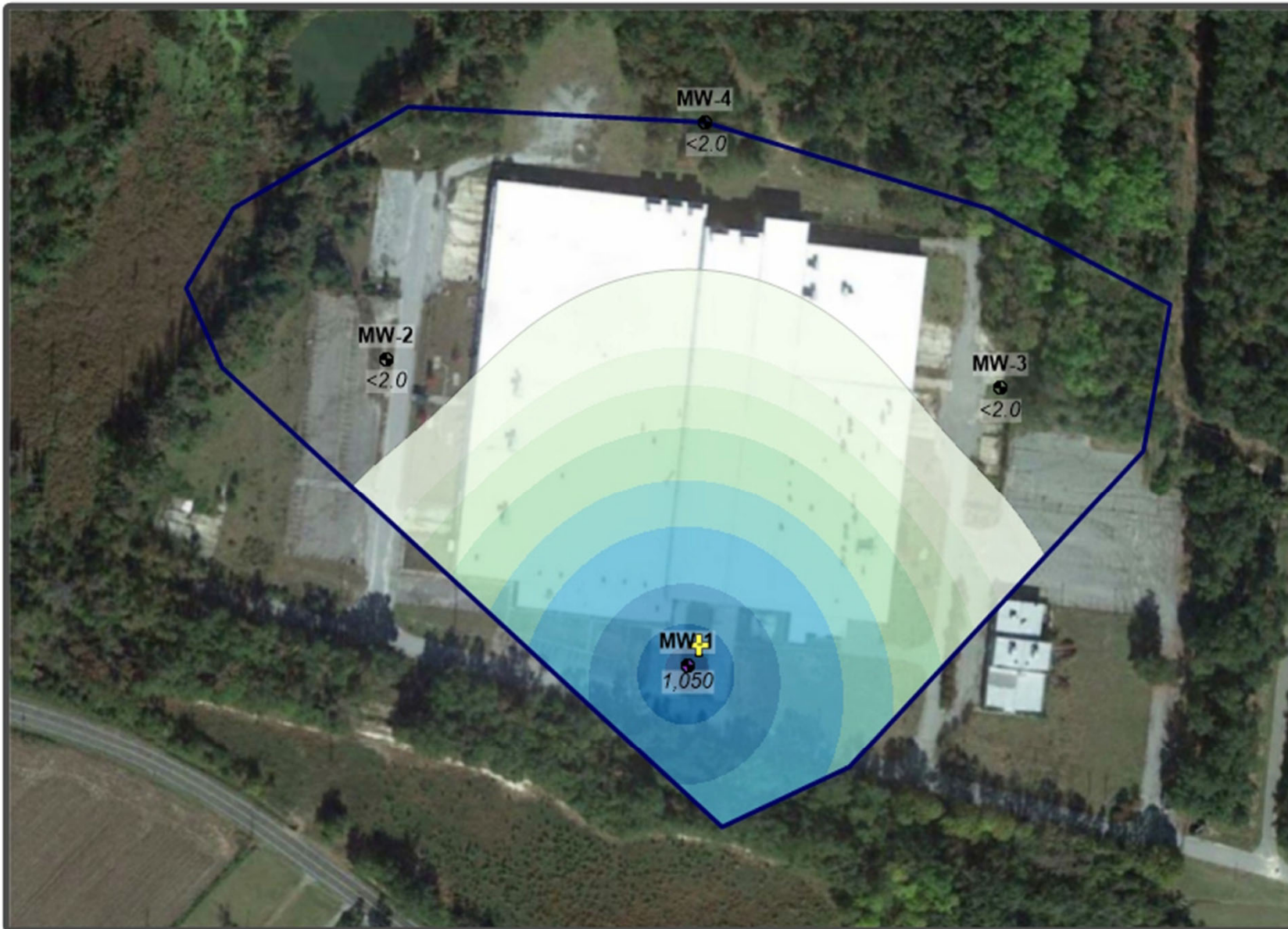
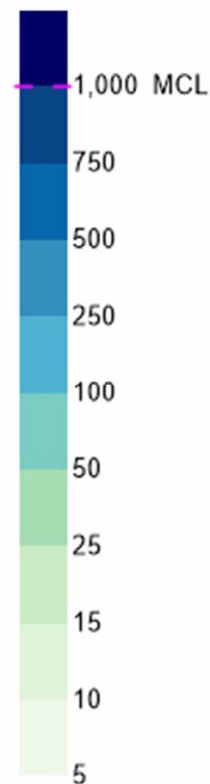
Plume Characteristics

Plume Area: **8.4 acres**
Plume Average Concentration: **339 nmol/L**
Plume Mass Indicator: **10.5 moles**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Toluene
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



LEGEND

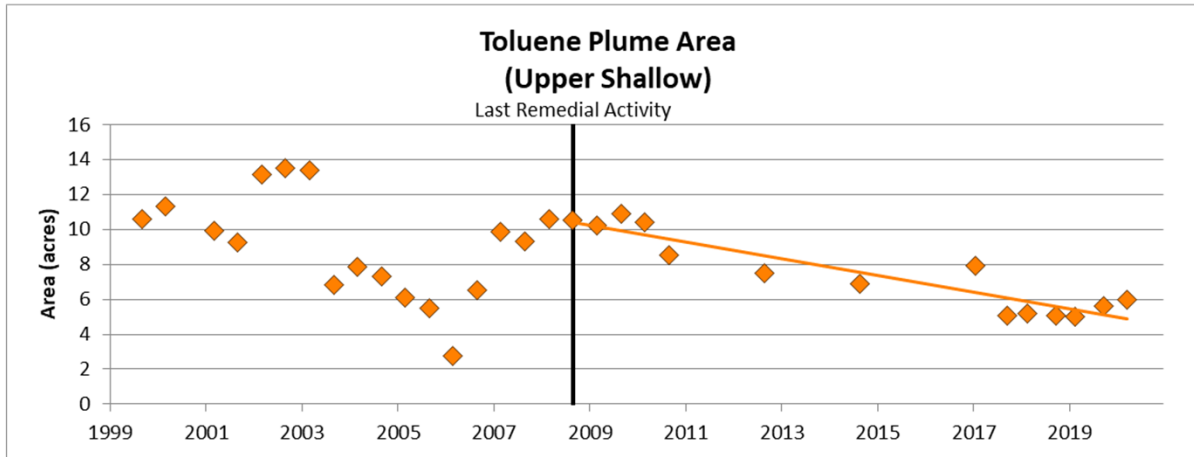
	Monitoring Well	
	Hanging Well	
112	Concentration ($\mu\text{g/L}$)	
NS (146)	Well Not Sampled (Assigned Value Shown)	
	Plume Center of Mass	
	MCL	

Plume Characteristics

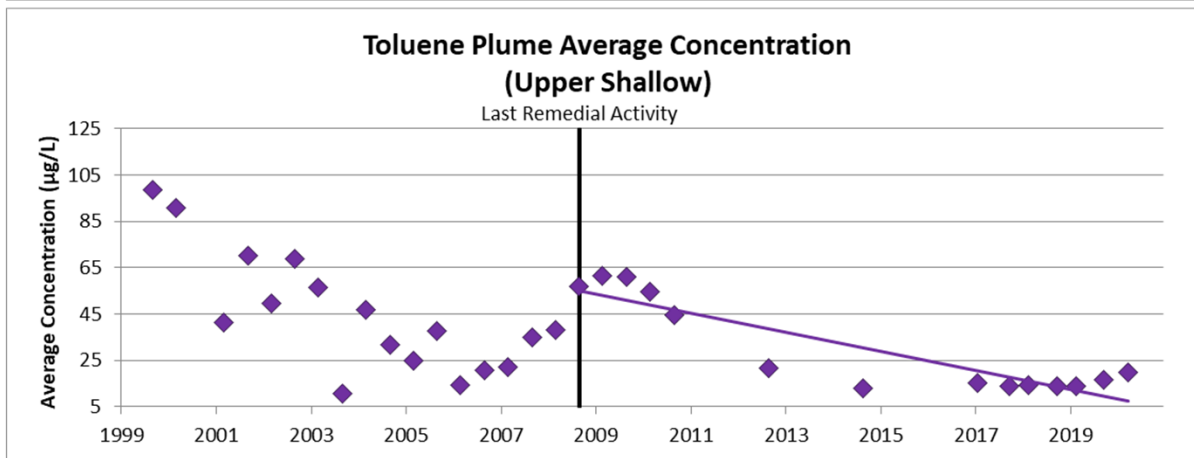
Plume Area: **10.6 acres**
 Plume Average Concentration: **98.5 $\mu\text{g/L}$**
 Plume Mass Indicator: **8.5 lbs**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

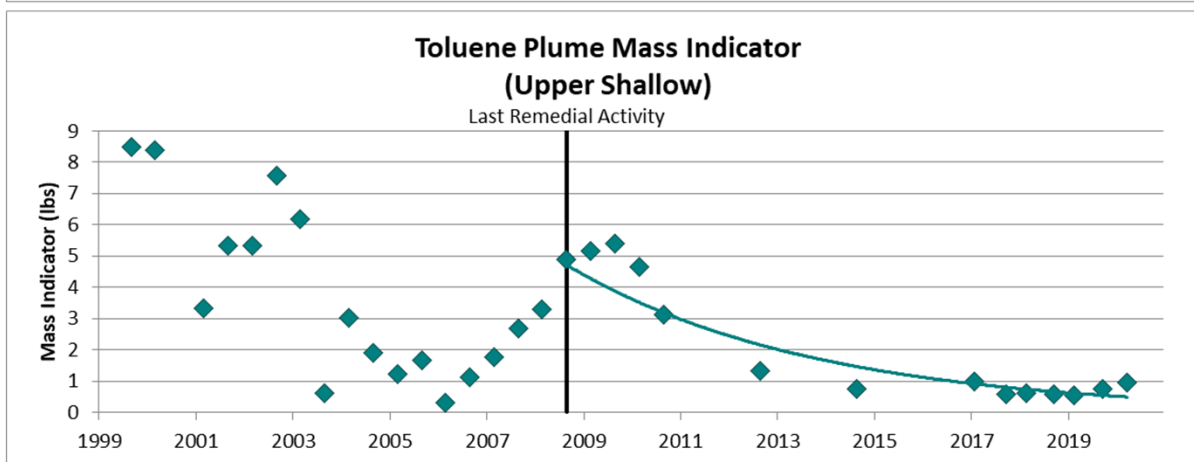




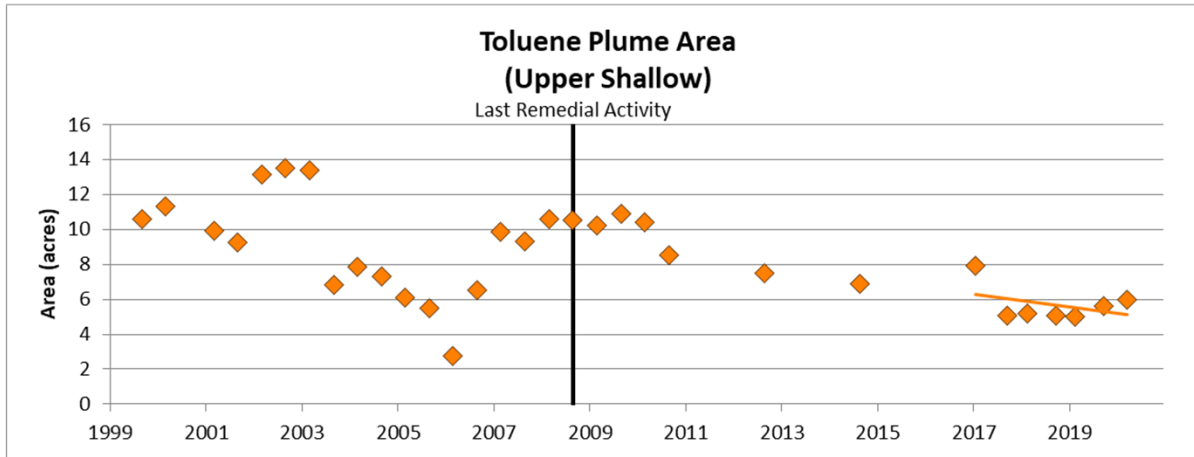
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



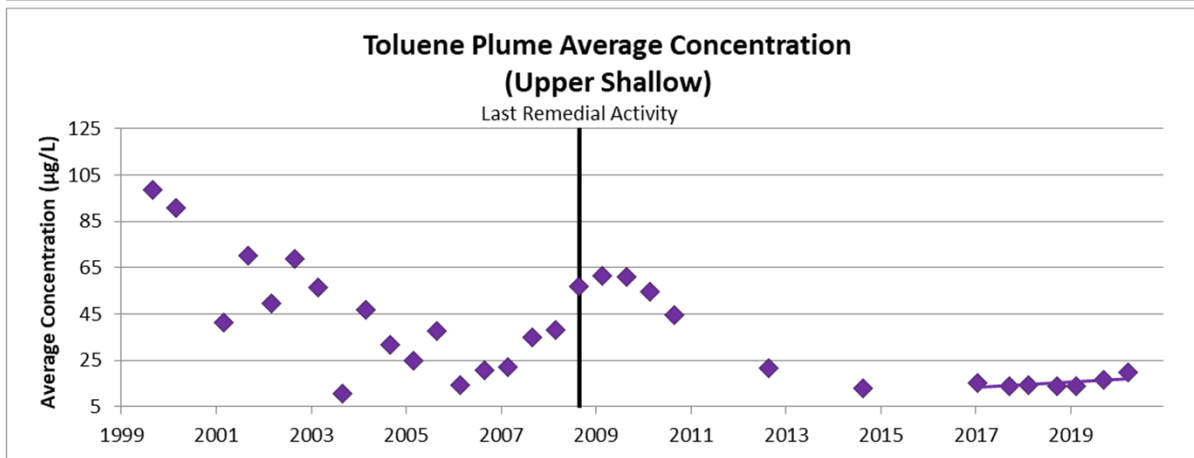
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: 99% Confidence
Regression: >99% Confidence



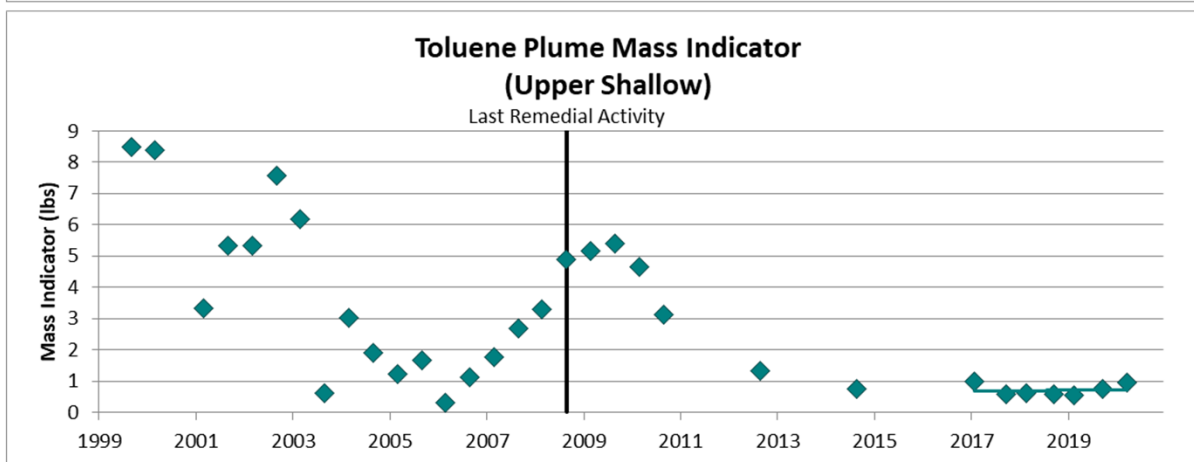
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 50% Confidence
Regression: 61% Confidence



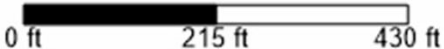
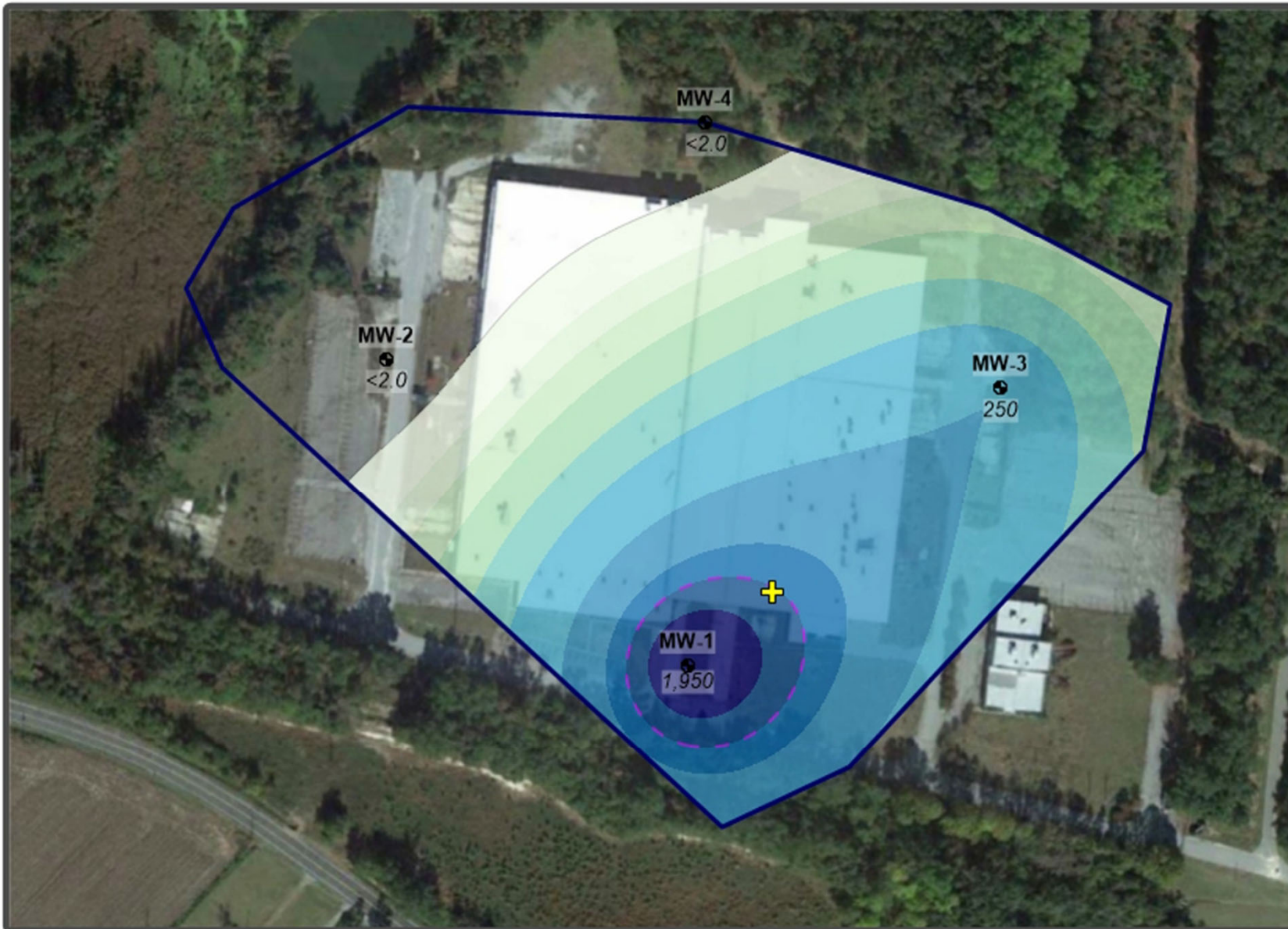
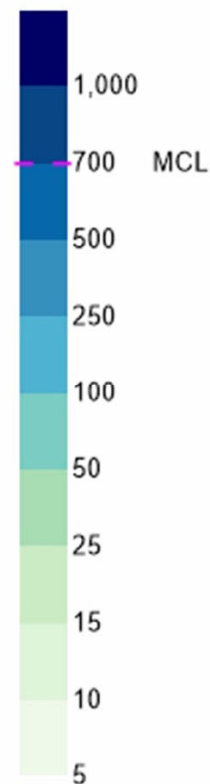
Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 72% Confidence
Regression: 88% Confidence



Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 50% Confidence
Regression: 18% Confidence

**Ethylbenzene
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



LEGEND

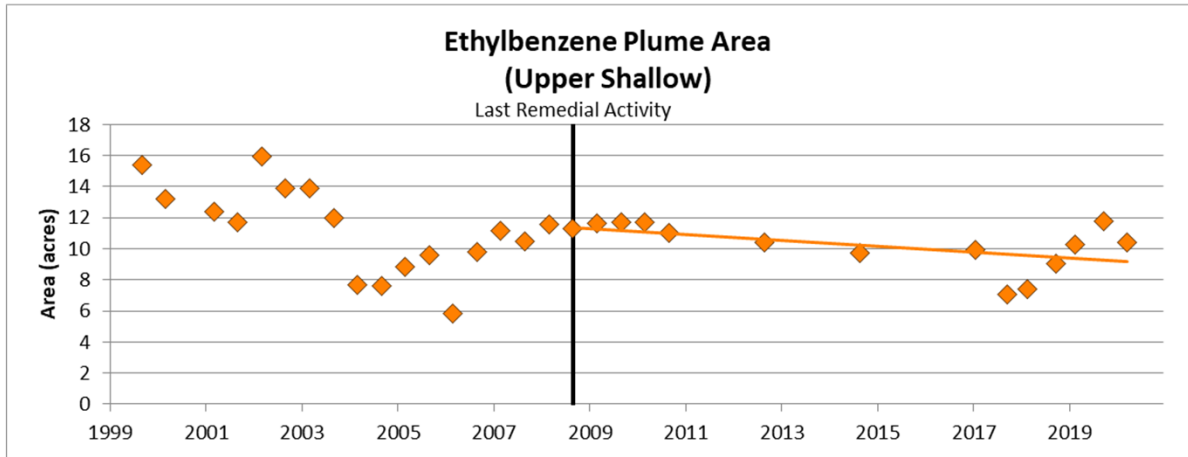
	Monitoring Well	
	Hanging Well	
112	Concentration ($\mu\text{g/L}$)	
NS (146)	Well Not Sampled (Assigned Value Shown)	
	Plume Center of Mass	
	MCL	

Plume Characteristics

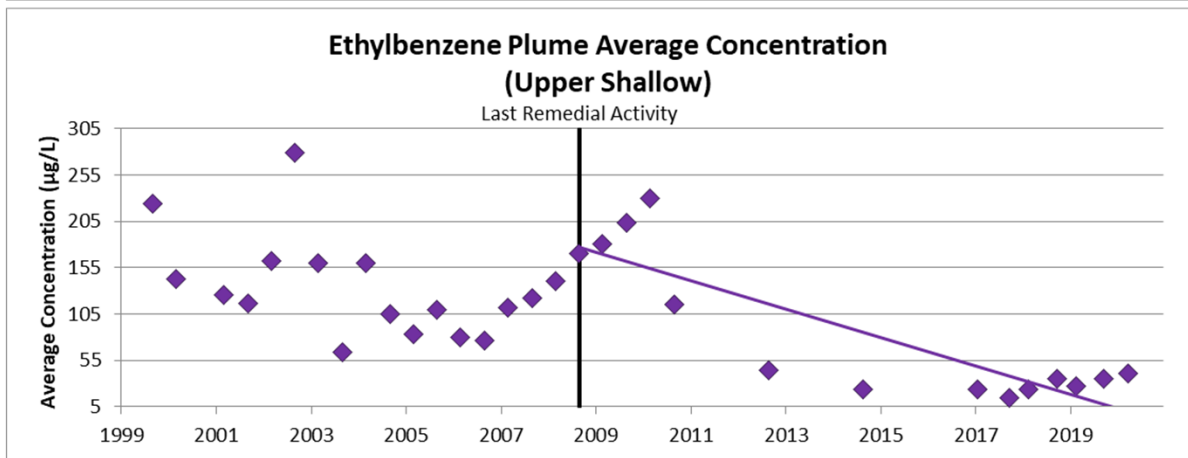
Plume Area: **15.4 acres**
 Plume Average Concentration: **224 $\mu\text{g/L}$**
 Plume Mass Indicator: **28.1 lbs**

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

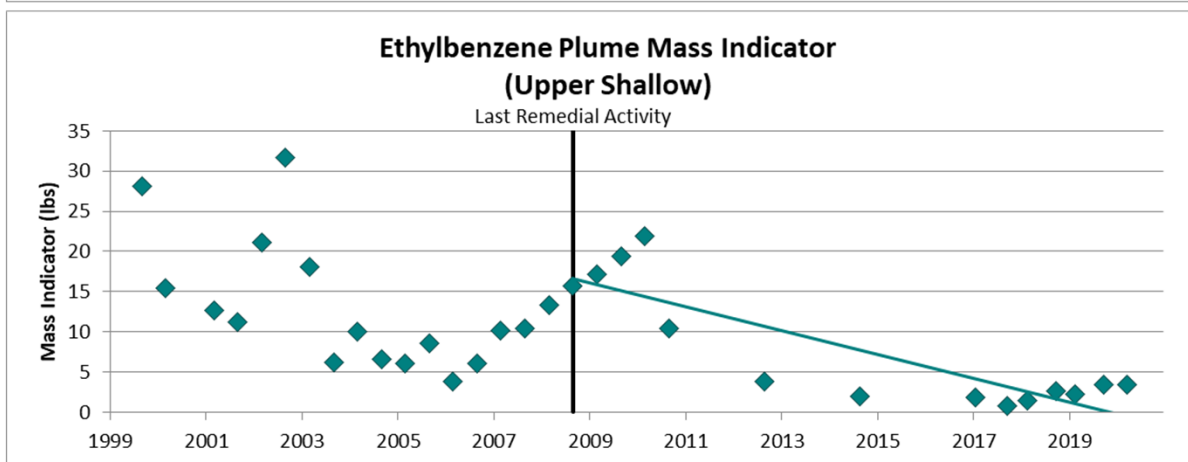




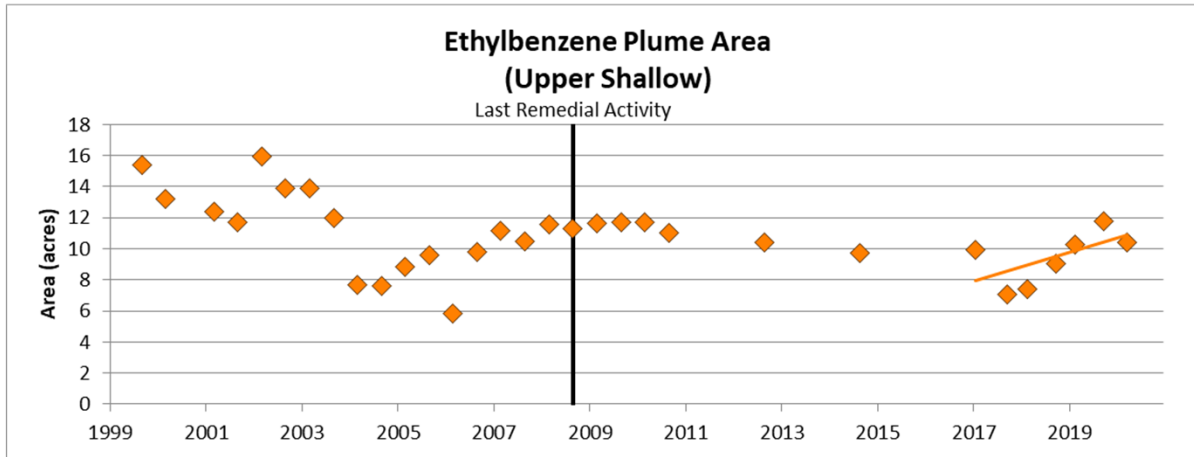
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: 91% Confidence
 Regression: 95% Confidence



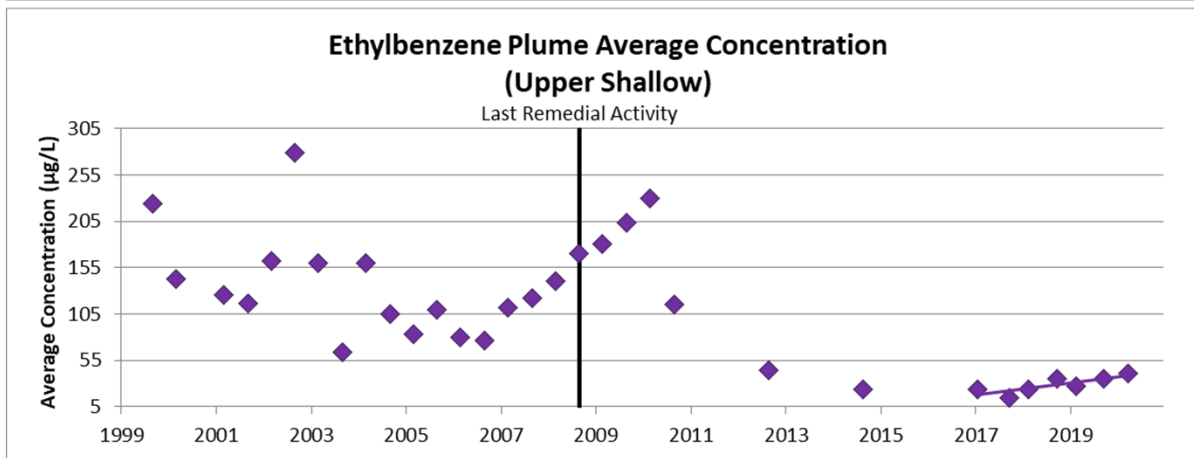
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: 97% Confidence
 Regression: >99% Confidence



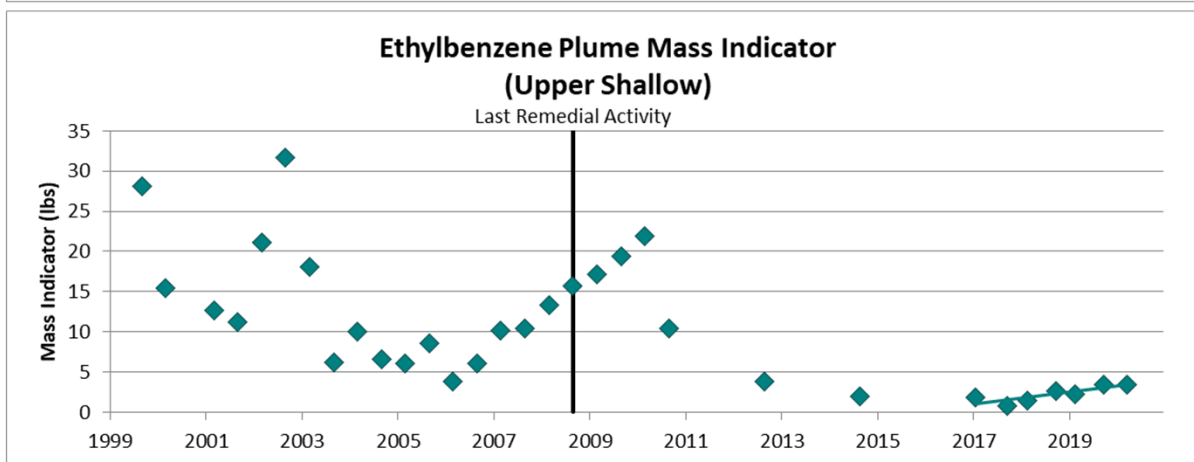
Sep-2008 to Apr-2020
 Decreasing Trend
 Mann-Kendall: 97% Confidence
 Regression: >99% Confidence



Feb-2017 to Apr-2020
 No Trend/Increasing Trend
 Mann-Kendall: 97% Confidence
 Regression: 85% Confidence



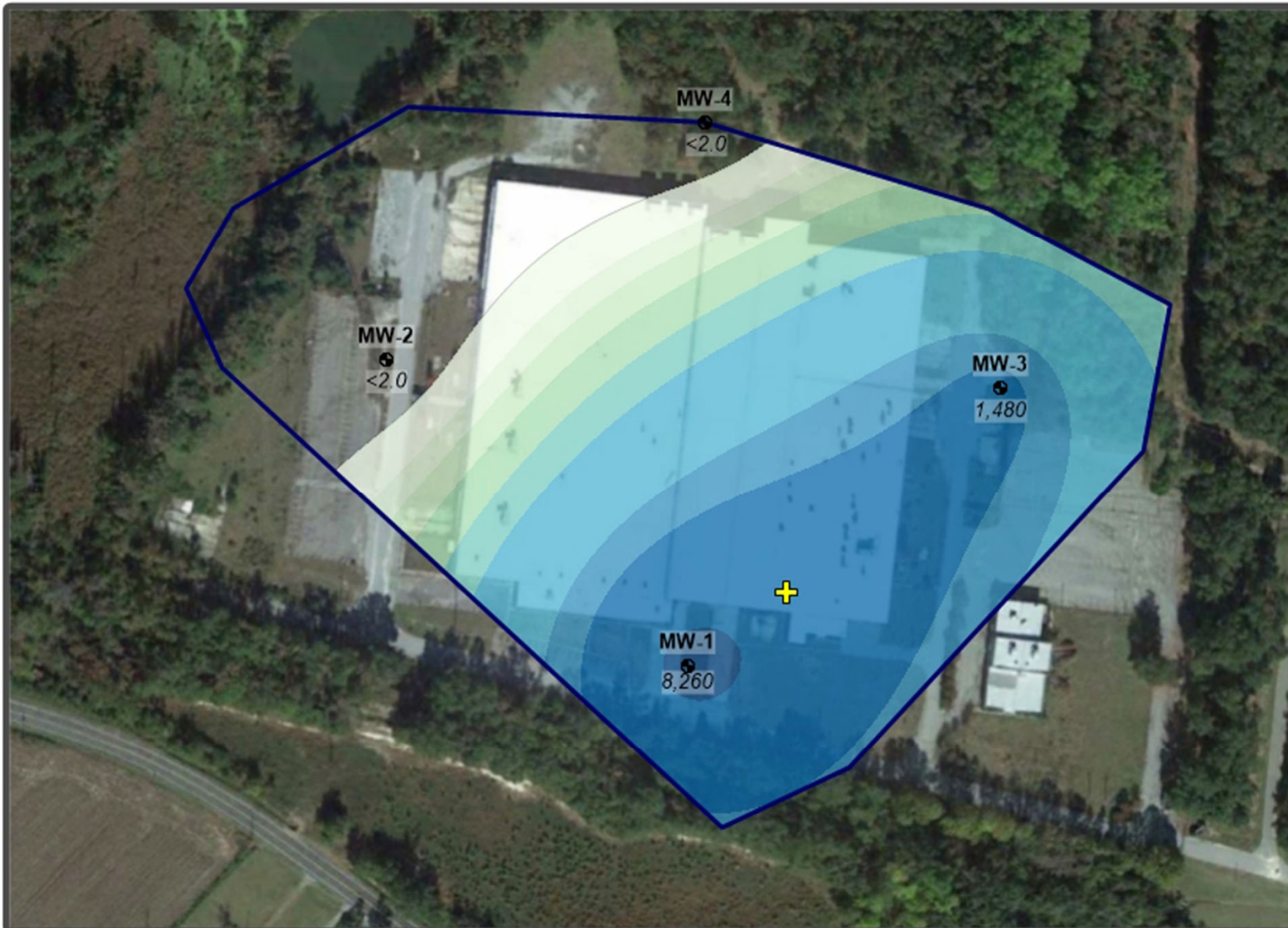
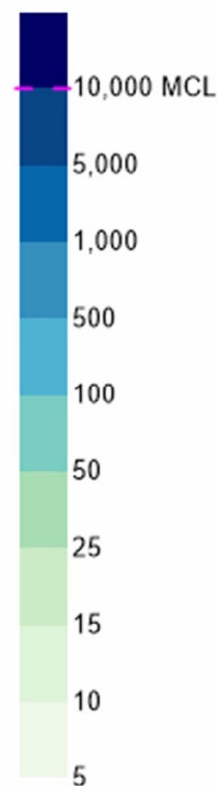
Feb-2017 to Apr-2020
 Increasing Trend
 Mann-Kendall: 99% Confidence
 Regression: 98% Confidence



Feb-2017 to Apr-2020
 Increasing Trend
 Mann-Kendall: 99% Confidence
 Regression: 98% Confidence

**Xylenes
Upper Shallow
Sep-1999**

Concentration ($\mu\text{g/L}$)



Plume Characteristics

Plume Area: **15.8 acres**
 Plume Average Concentration: **833 $\mu\text{g/L}$**
 Plume Mass Indicator: **107 lbs**

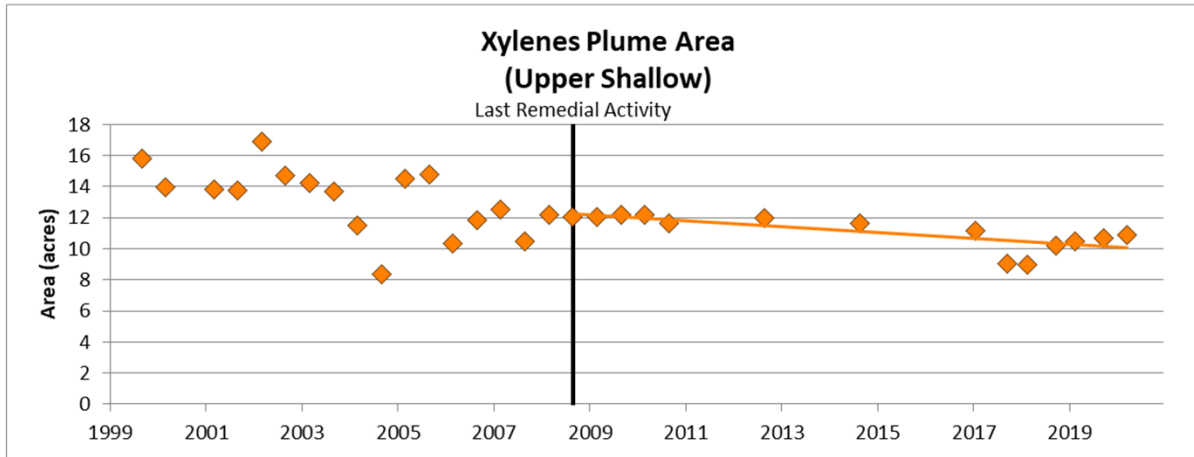
This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.



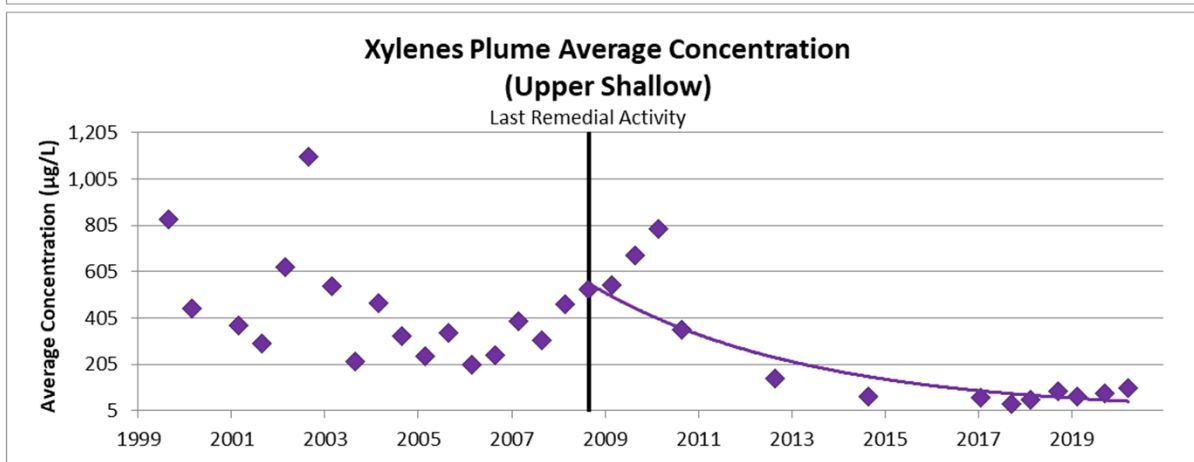
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BUSINESS SOLUTIONS

LEGEND

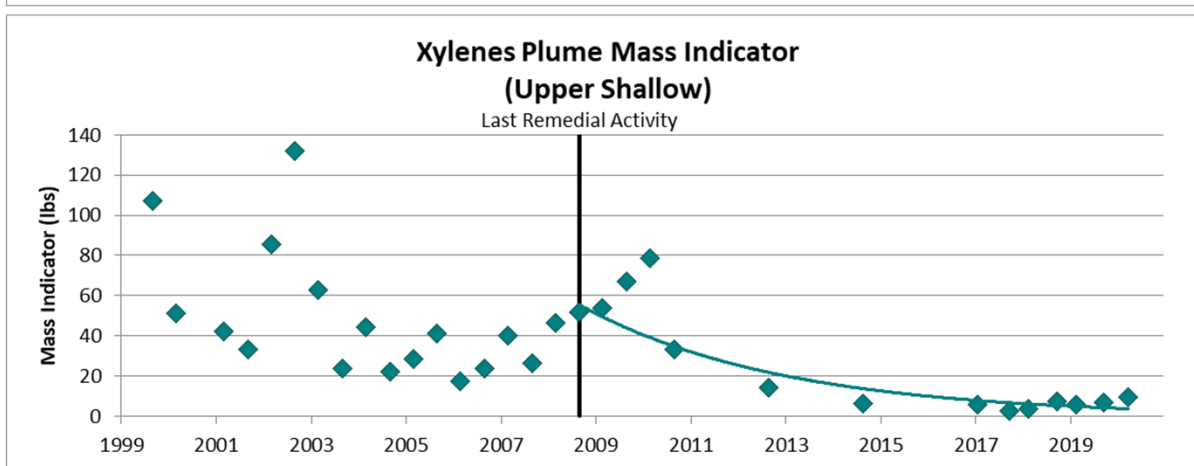
- MW-1 Monitoring Well
- MW-9 Hanging Well
- 112 Concentration ($\mu\text{g/L}$)
- NS (146) Well Not Sampled (Assigned Value Shown)
- Plume Center of Mass
- MCL



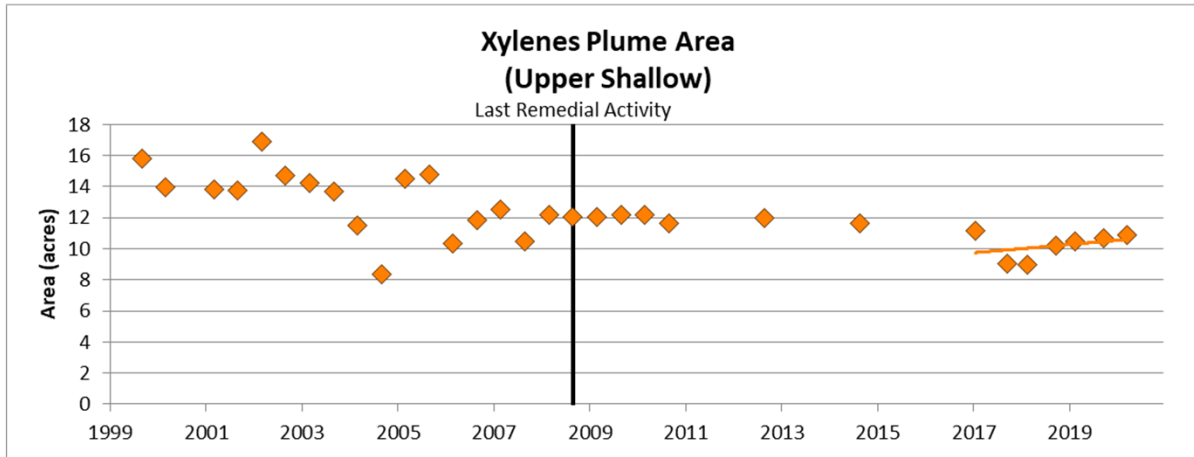
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: >99% Confidence
Regression: >99% Confidence



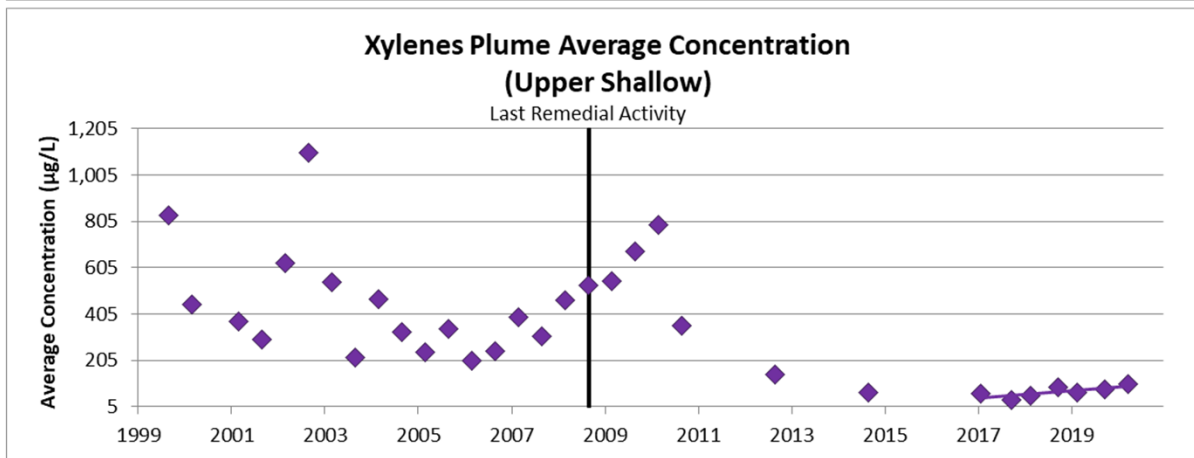
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: 98% Confidence
Regression: >99% Confidence



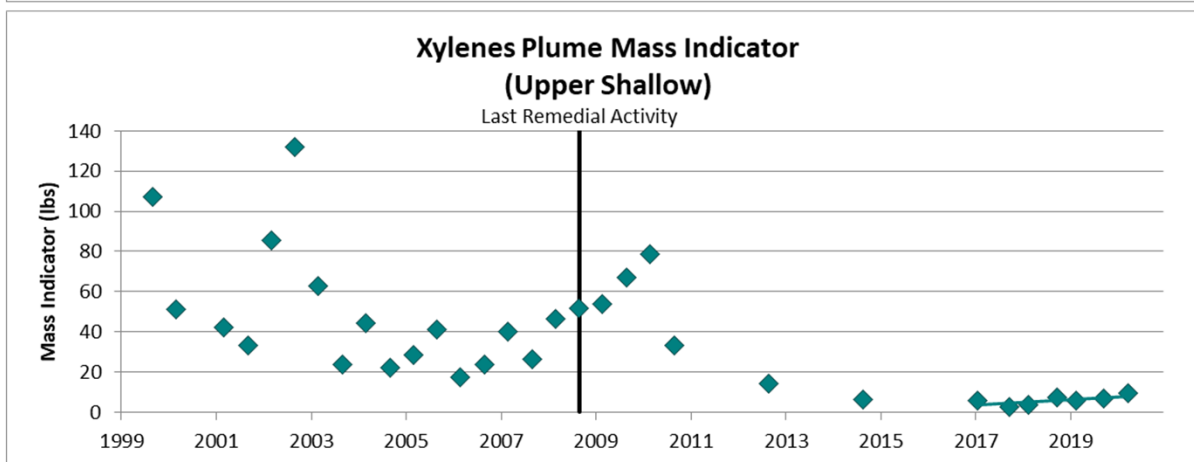
Sep-2008 to Apr-2020
Decreasing Trend
Mann-Kendall: 98% Confidence
Regression: >99% Confidence



Feb-2017 to Apr-2020
No Trend
Mann-Kendall: 81% Confidence
Regression: 54% Confidence



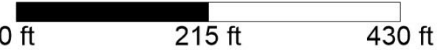
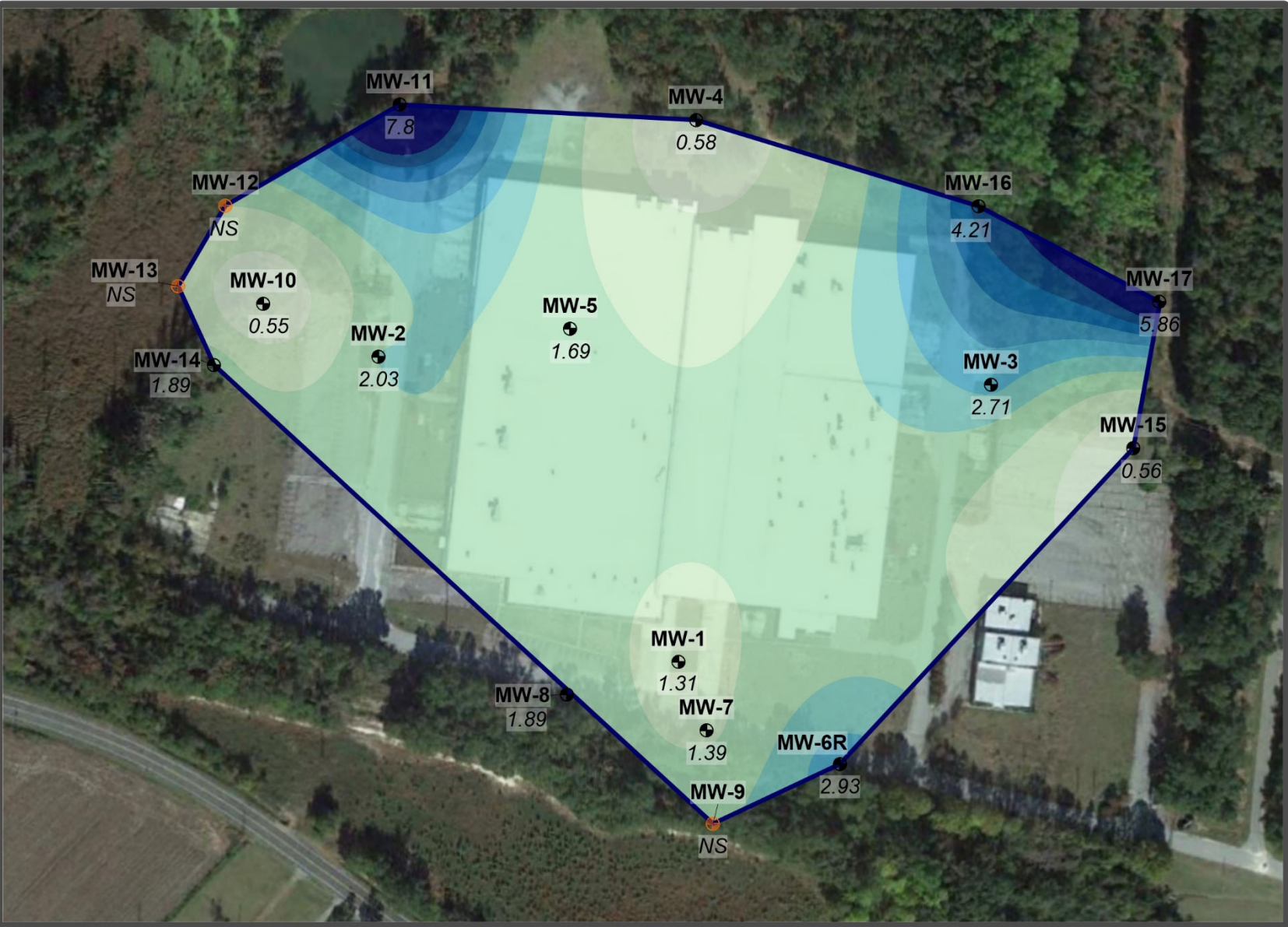
Feb-2017 to Apr-2020
Increasing Trend
Mann-Kendall: 97% Confidence
Regression: 94% Confidence



Feb-2017 to Apr-2020
Increasing Trend
Mann-Kendall: 97% Confidence
Regression: 93% Confidence

**Dissolved Oxygen
Upper Shallow
Apr-2020**

Concentration (mg/L)

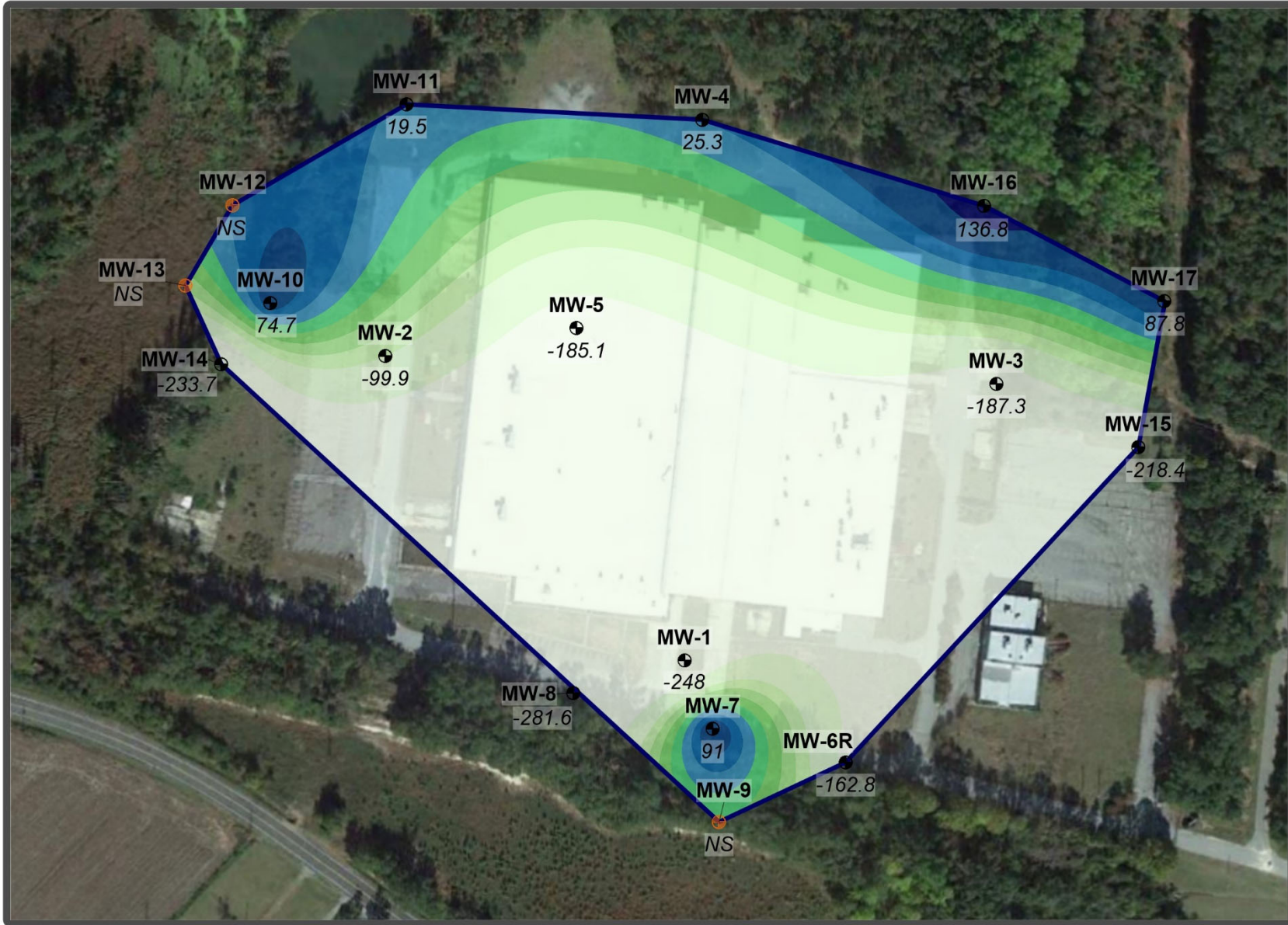


LEGEND

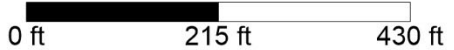
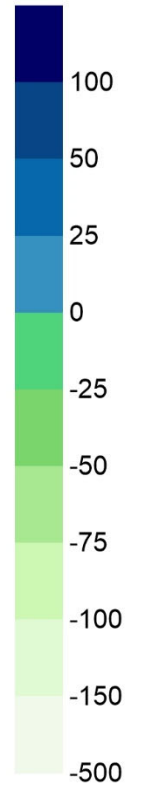
- MW-1 Monitoring Well
- MW-9 Hanging Well
- 112 Concentration (mg/L)

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**ORP
Upper Shallow
Apr-2020**



ORP (mV)



LEGEND

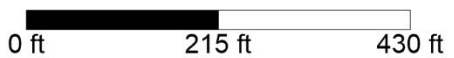
- MW-1 Monitoring Well
- MW-9 Hanging Well
- 112 ORP (mV)

N

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Ferrous Iron
Upper Shallow
Apr-2020**

Concentration (mg/L)



LEGEND

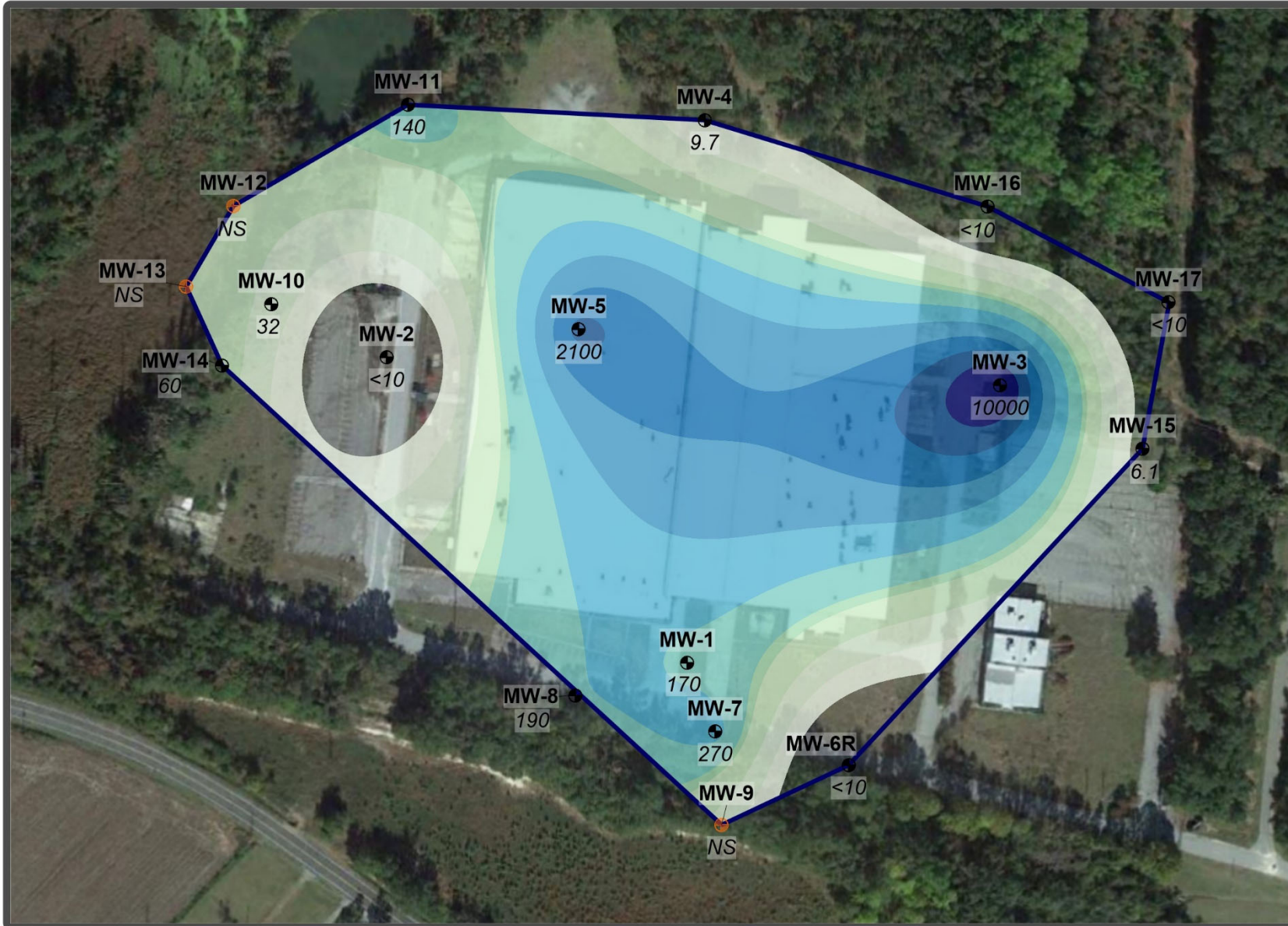
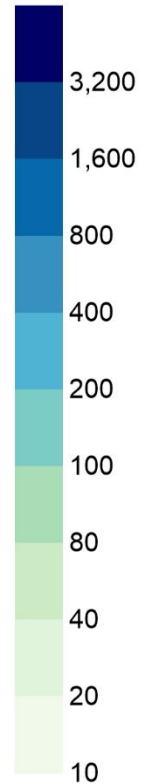
- MW-1 Monitoring Well
- MW-9 Hanging Well
- 1.42 Concentration (mg/L)

N

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Methane
Upper Shallow
Apr-2020**

Concentration (µg/L)



0 ft 215 ft 430 ft

LEGEND

- MW-1 Monitoring Well
- MW-9 Hanging Well
- 170 Concentration (µg/L)

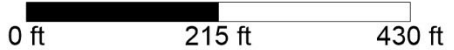
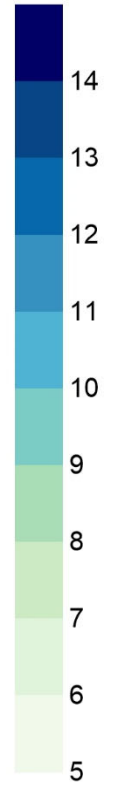
N

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.



**Ethane
Upper Shallow
Apr-2020**

Concentration (µg/L)



LEGEND

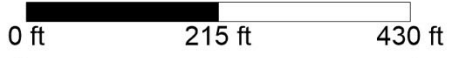
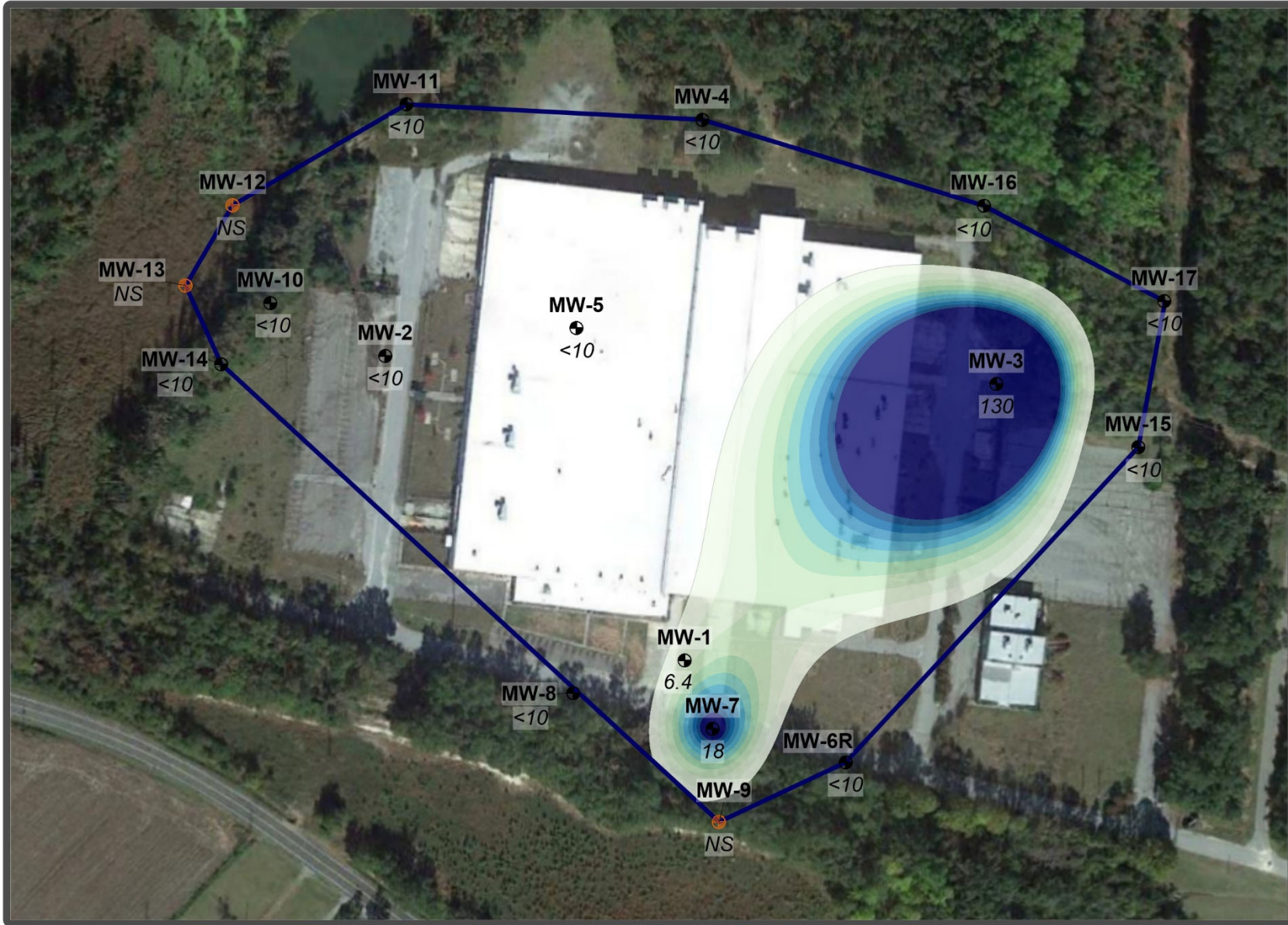
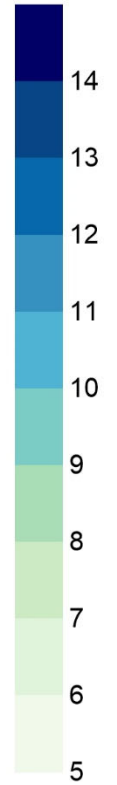
- MW-1 Monitoring Well
- MW-9 Hanging Well
- <10 Concentration (µg/L)

N

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Ethene
Upper Shallow
Apr-2020**

Concentration (µg/L)



LEGEND

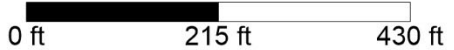
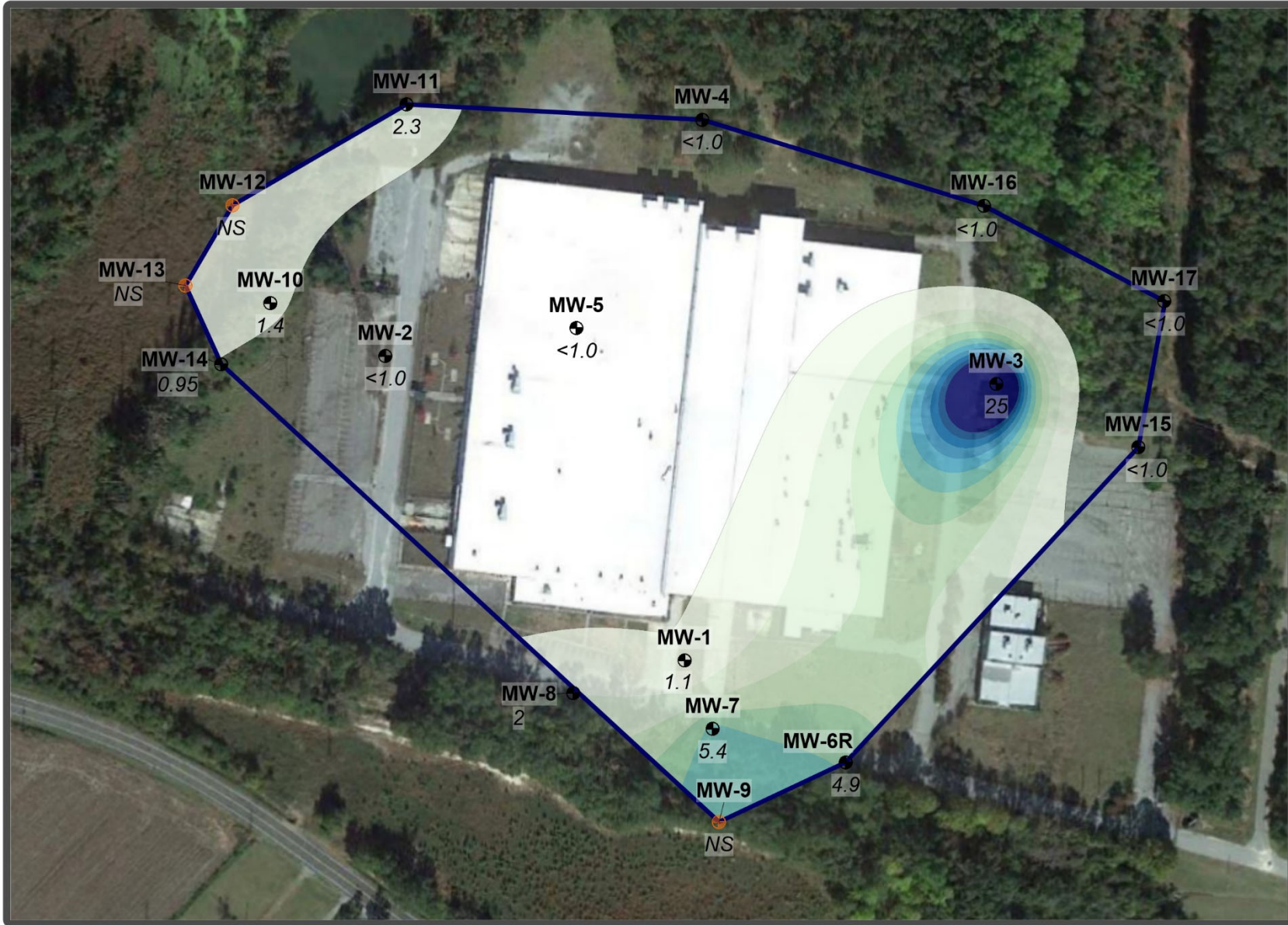
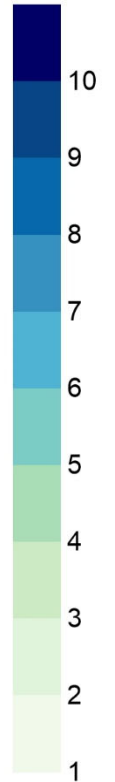
- MW-1 Monitoring Well
- MW-9 Hanging Well
- 6.4 Concentration (µg/L)

N

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Total Organic Carbon
Upper Shallow
Apr-2020**

Concentration (mg/L)

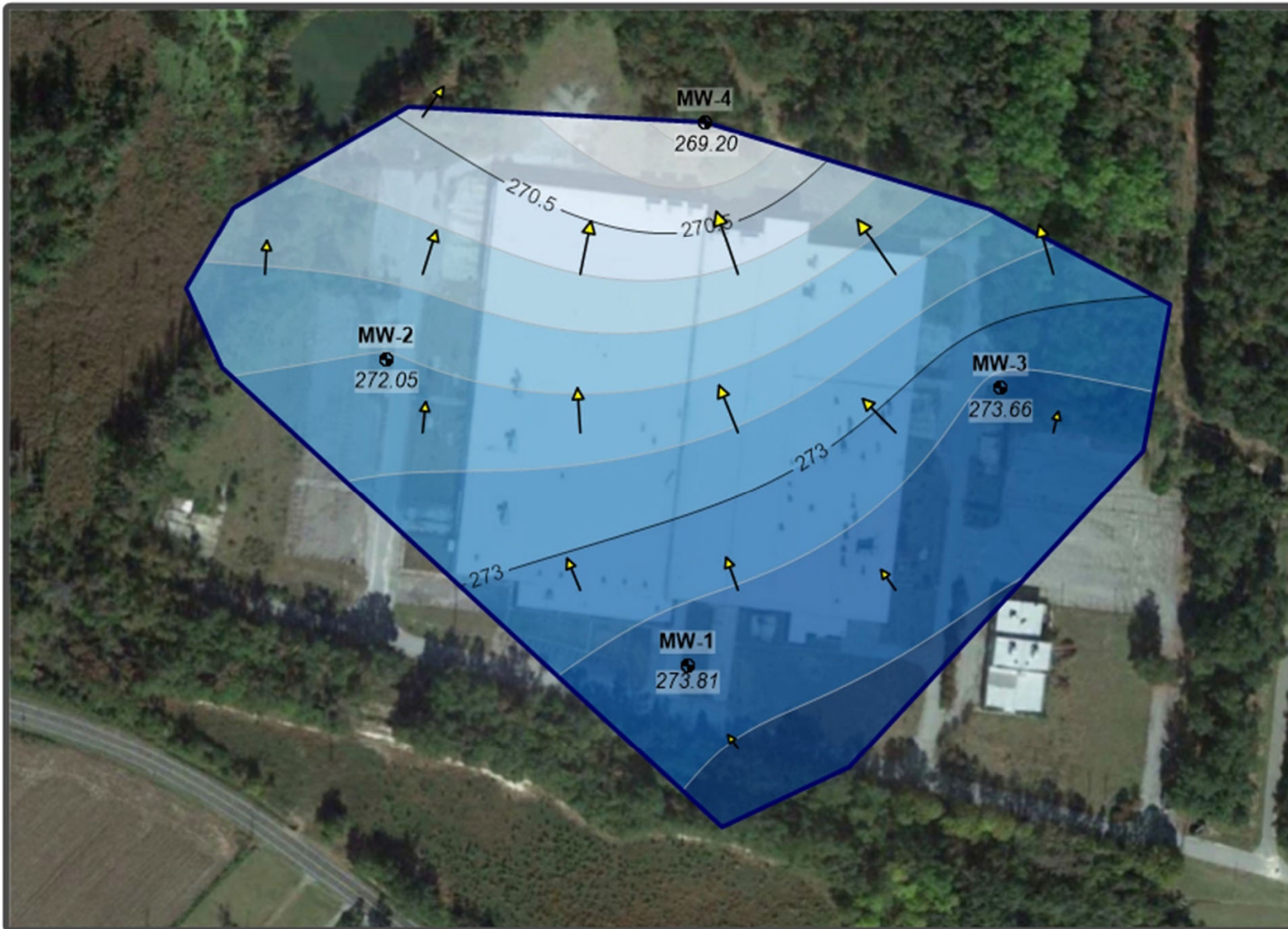


LEGEND

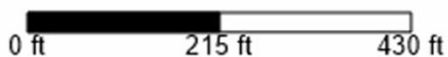
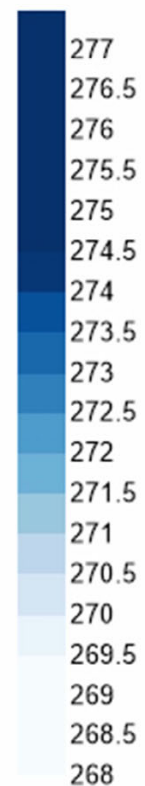
- MW-1 Monitoring Well
- MW-9 Hanging Well
- 1.1 Concentration (mg/L)

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

**Groundwater Elevation
Upper Shallow
May-2000**



Elevation (ft)



Characteristics

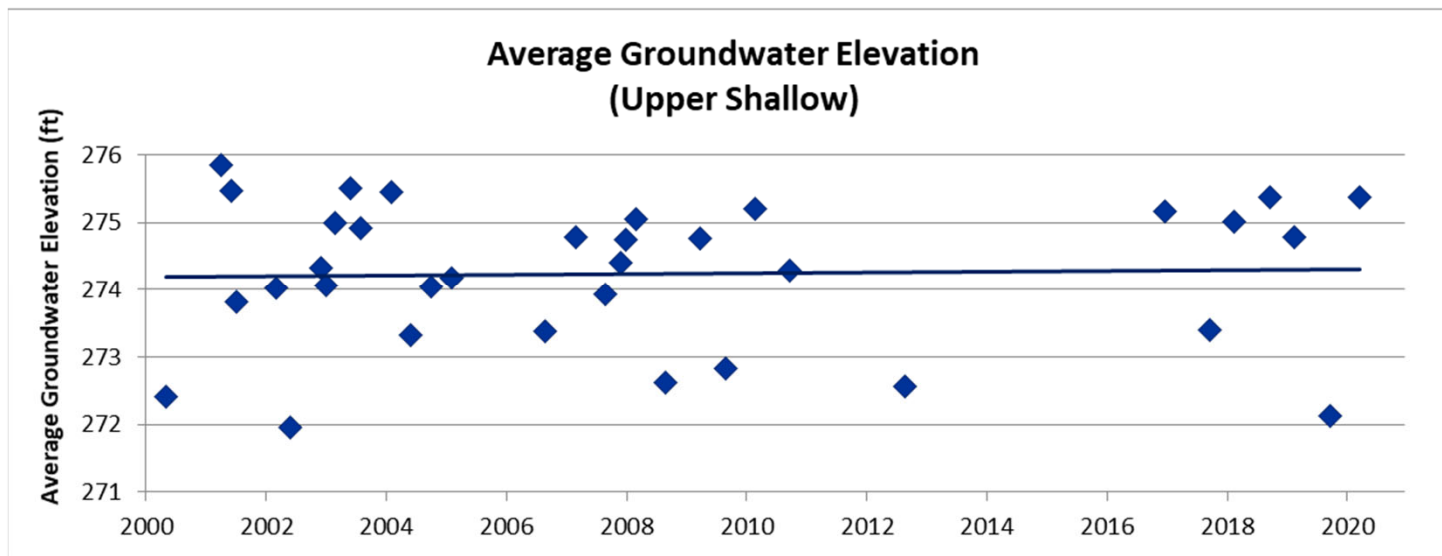
Average Groundwater Elevation: 272.41 ft

LEGEND

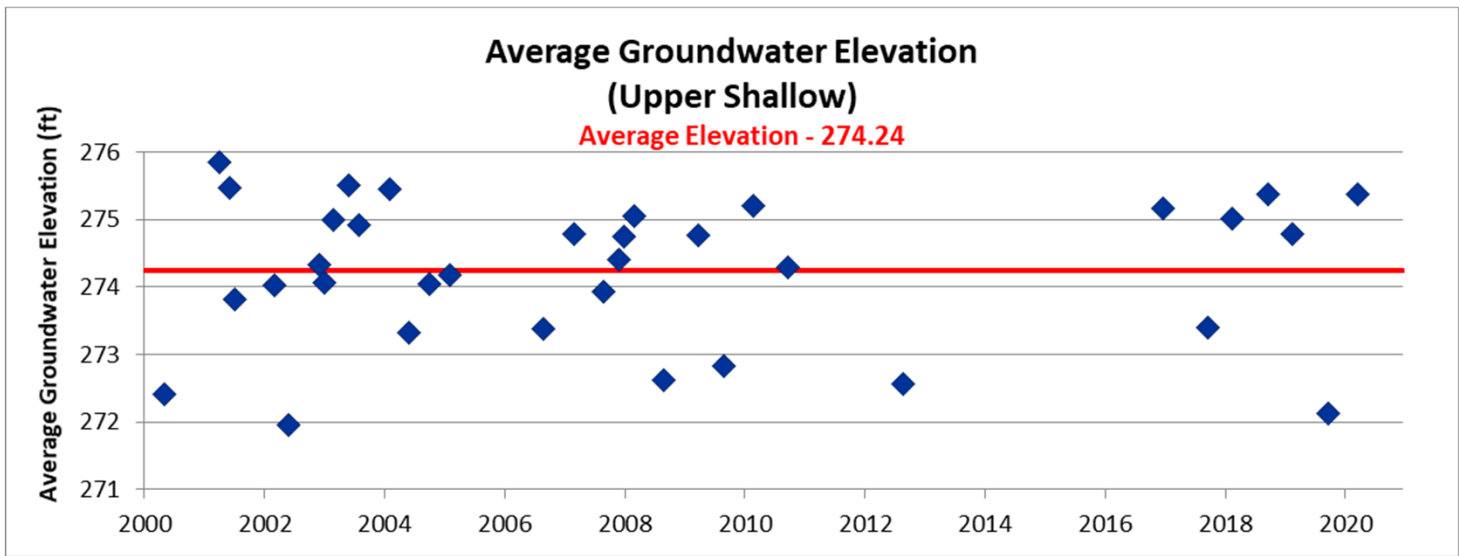
- MW-1 Monitoring Well
- MW-5 Hanging Well
- 112 Elevation (ft)

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

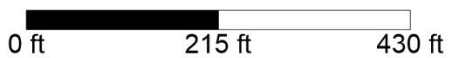
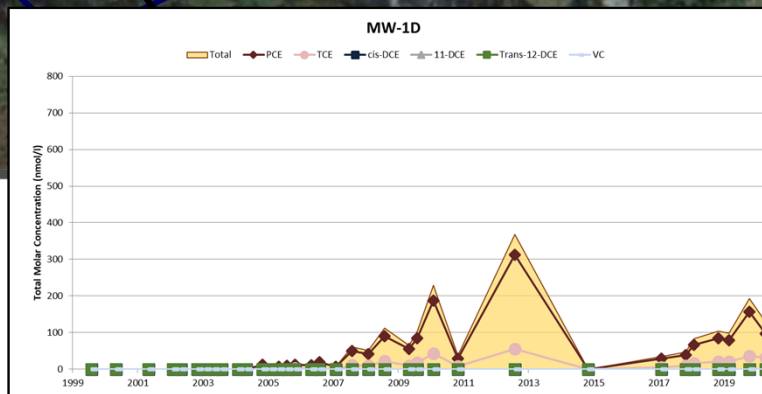
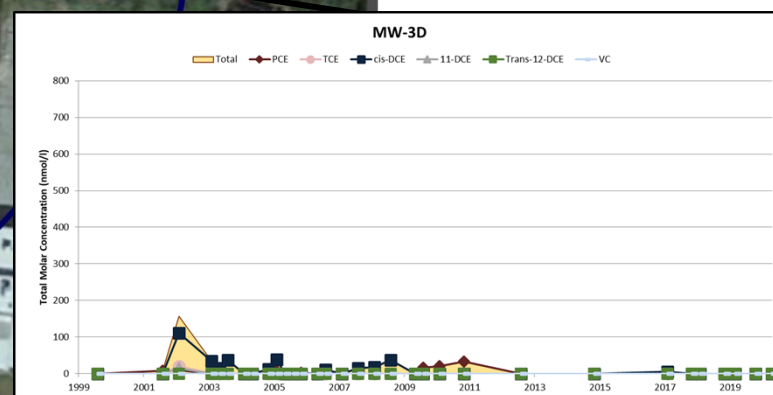
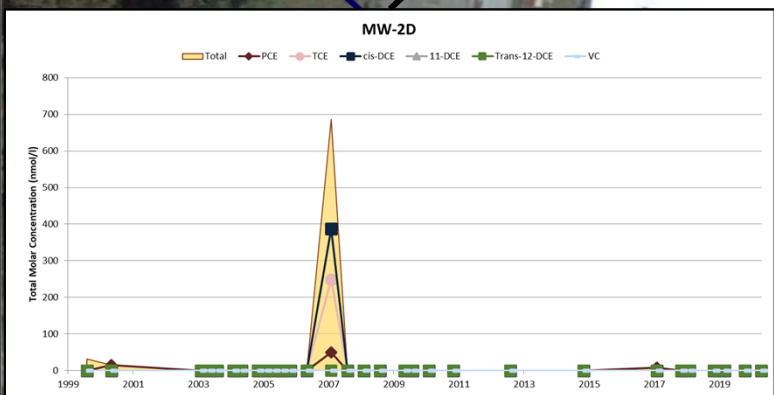
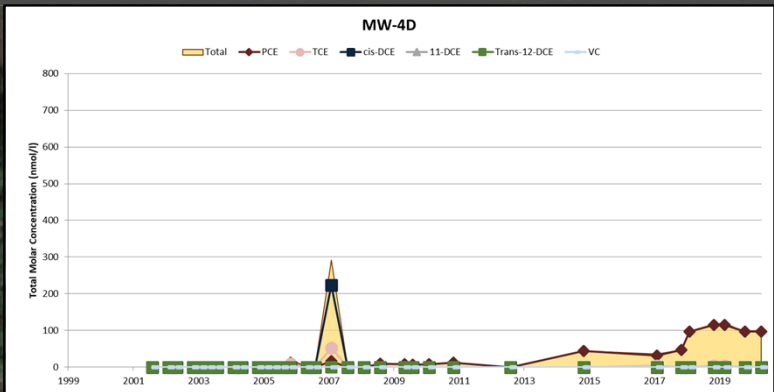




May-2000 to Apr-2020
 No Trend
 Mann-Kendall: 63% Confidence
 Regression: 14% Confidence



Chloroethenes Deep



LEGEND

MW-1 Monitoring Well N

This analysis requires fixed data points within a fixed area for the purposes of assessing relative changes of area, average concentration, and mass indicator over time. Therefore, any created isopleth maps are not intended to be a depiction or model of the actual plume but rather is meant to show conceptual behavior of the aforementioned metrics over time.

