

# **Portage Creek Remediation: Volume and Mass Estimations**

**Prepared by The Fields Group:**

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**John Canar**

**Charles Roth**

**April 14, 2011**



## ***Notes on Volume and Mass Calculations:***

**Volume of contaminated sediment was estimated using the FIELDS Tools for ArcGIS software by multiplying surface area times a proposed removal depth for each excavation area.**

**Mass of PCB was estimated using the FIELDS Tools for ArcGIS. The values were derived by Natural Neighbor interpolation of the maximum of the BBL 1993-1997 and MDNRE 2008 and 2010 PCB sediment sampling results at each one foot depth interval. A density of 2,500 lb/yd<sup>3</sup> was used in the estimate.**

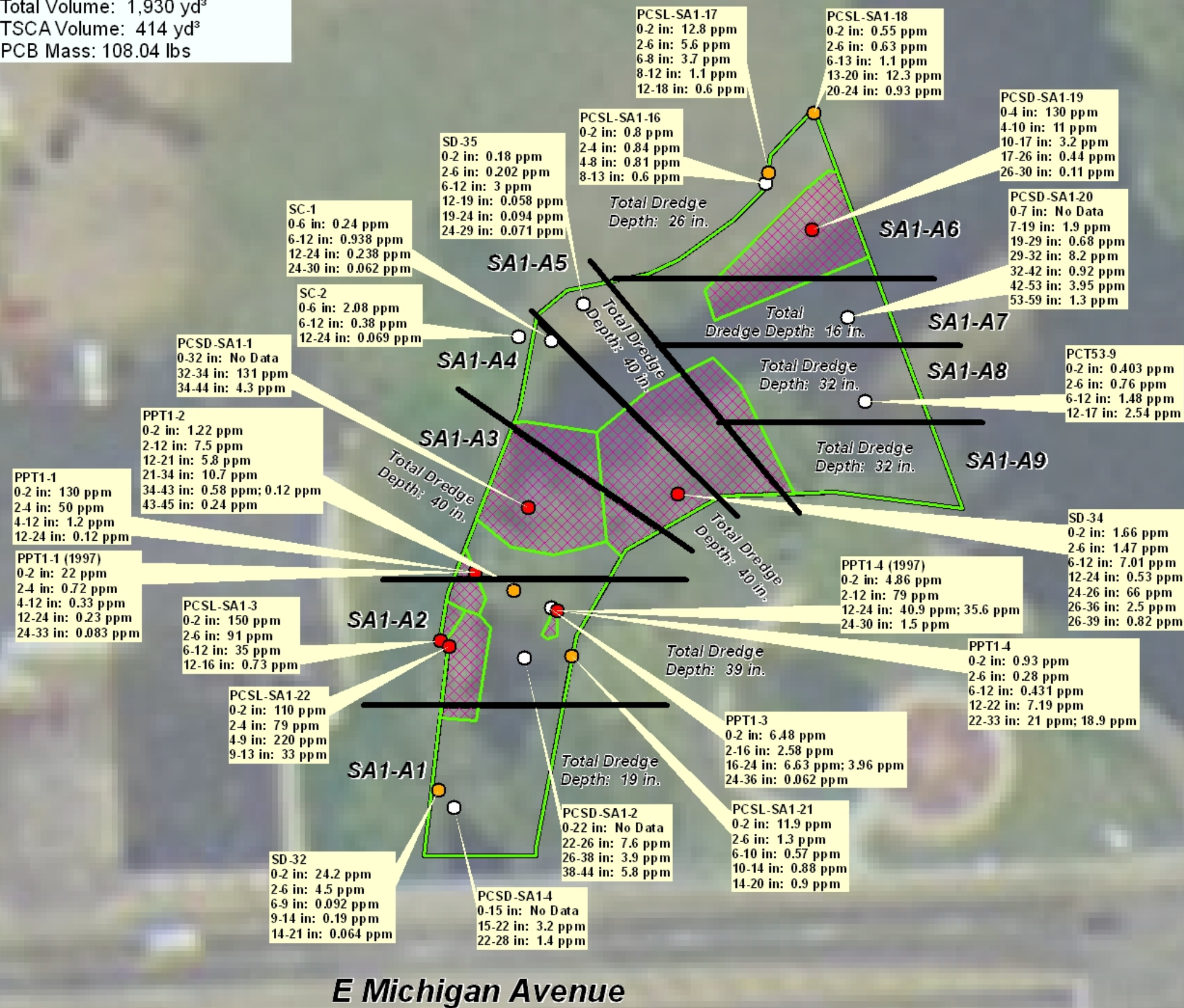


Portage Creek Mass and Volume Estimates:

Conservative Total Volume: 18,138 yd³  
Conservative Total Mass: 2,223.15 lbs  
These totals include the volume and mass from the Low Priority Area of SA5-B.

Conservative Total Volume of High Priority Areas Only: 16,709 yd³  
Conservative Total Mass of High Priority Areas Only: 2,123.26 lbs

SA1-A Surface Area: 2201.34 yd²  
Total Volume: 1,930 yd³  
TSCA Volume: 414 yd³  
PCB Mass: 108.04 lbs



**Legend**

- High Priority Remediation Polygon Boundary
- Low Priority Remediation Polygon Boundary
- Thiessen Polygon Estimated PCB ≥ 50 ppm
- Removal Grid Boundary

**Maximum PCB Concentration (ppm)**

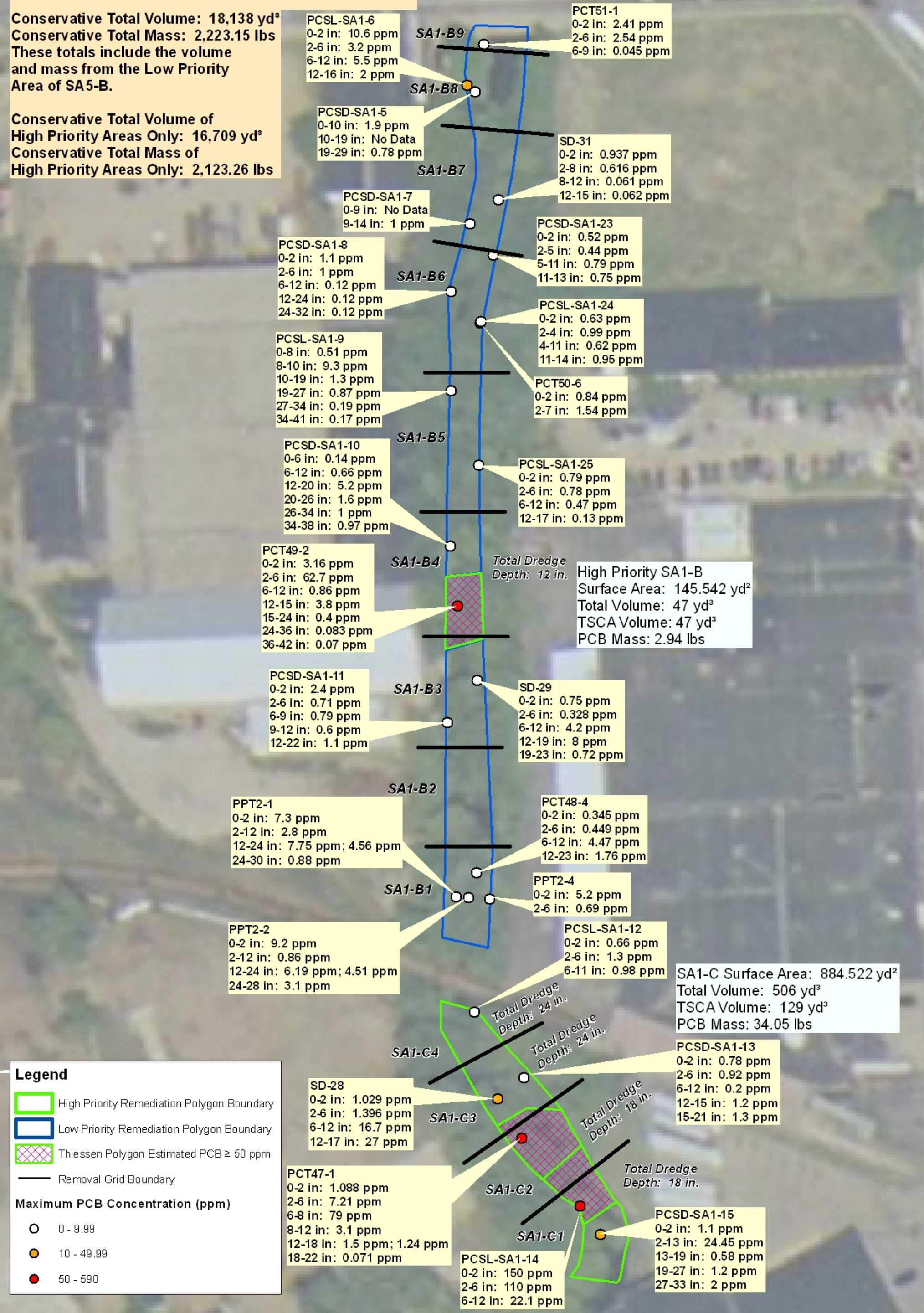
- 0 - 9.99
- 10 - 49.99
- 50 - 590

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E Michigan Avenue

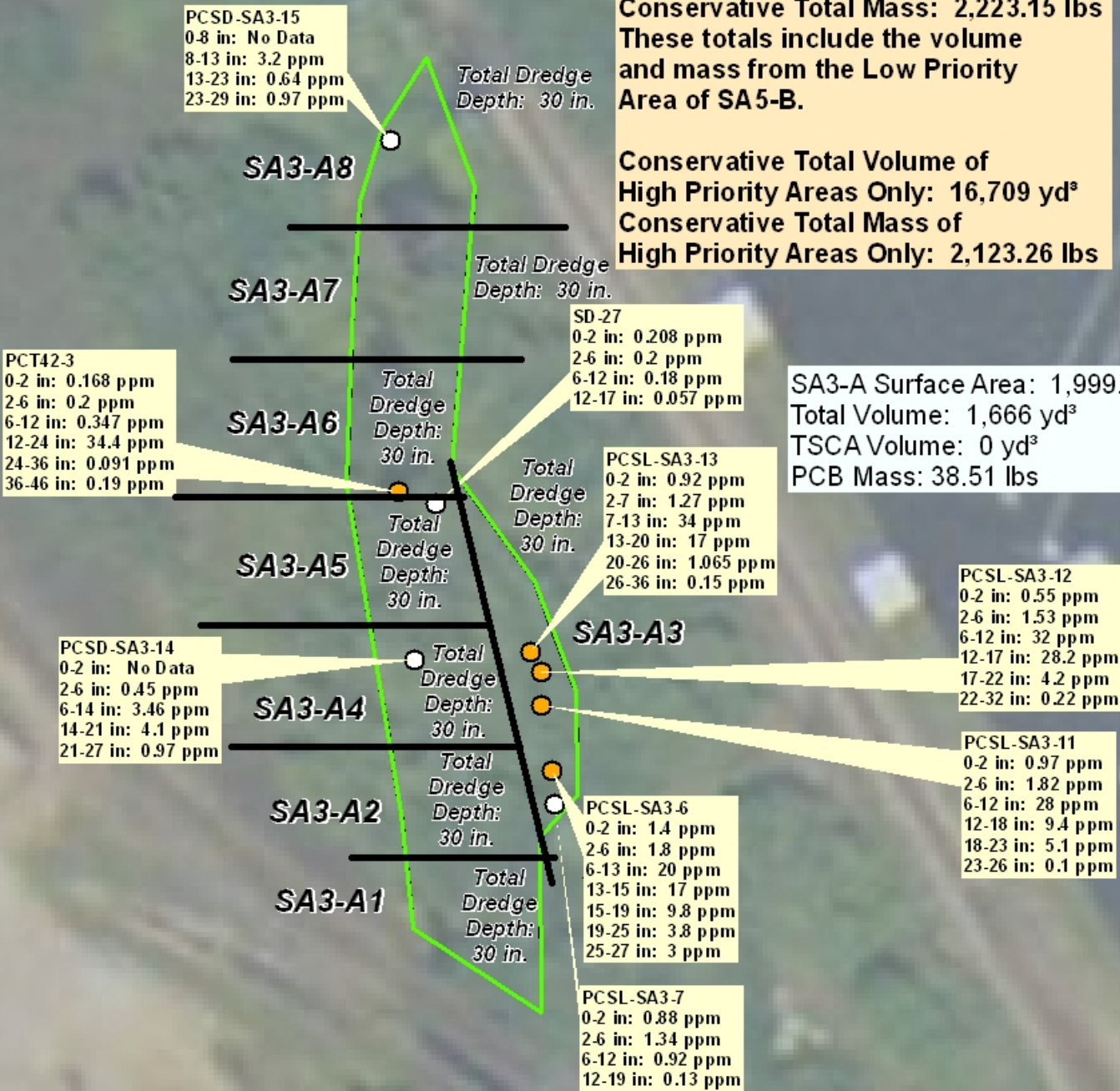


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SA3-A Surface Area: 1,999.017 yd²  
Total Volume: 1,666 yd³  
TSCA Volume: 0 yd³  
PCB Mass: 38.51 lbs



SA3-B Surface Area: 1,504.281 yd²  
Maximum Depth > 10 ppm: 79 Inches  
Volume > 10 ppm: 3,301.061 yd³  
Maximum Depth + 6 Inches: 85 Inches  
Volume + 6 Inches: 3,551.774 yd³  
Volume to 60 Inches: 2,506 yd³  
PCB Mass (0-60 Inches): 53.47 lbs  
TSCA Volume: 0 yd³

Legend

High Priority Remediation Polygon Boundary

Low Priority Remediation Polygon Boundary

Thiessen Polygon Estimated PCB ≥ 50 ppm

Removal Grid Boundary

Maximum PCB Concentration (ppm)

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10 - 49.99

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SA5-A Surface Area: 1,564.226 yd²  
Total Volume: 2,086 yd³  
TSCA Volume: 951 yd³  
PCB Mass: 876.37 lbs

SA5-B Surface Area: 1,217.575 yd²  
Total Volume: 1,429 yd³  
TSCA Volume: 18 yd³  
PCB Mass: 99.89 lbs

PCSD-SA5-14  
0-2 in: No Data  
2-6 in: 2.2 ppm  
6-9 in: 0.42 ppm  
9-17 in: 1 ppm  
17-24 in: 0.915 ppm  
24-30 in: 0.61 ppm  
30-34 in: 0.28 ppm

PPT8-1  
0-2 in: 1.18 ppm  
2-12 in: 0.67 ppm  
12-24 in: 0.45 ppm  
24-30 in: 0.036 ppm

PPT8-2  
0-2 in: 0.85 ppm  
2-14 in: 1.538 ppm  
14-26 in: 4.62 ppm  
26-30 in: 7.44 ppm; 4.56 ppm  
30-36 in: 2.42 ppm

PPT8-3 (1997)  
0-2 in: 1 ppm  
2-12 in: 2.8 ppm  
12-24 in: 19.2 ppm  
24-36 in: 0.77 ppm; 0.56 ppm  
36-46 in: 0.07 ppm

PPT8-3  
0-2 in: 0.14 ppm  
2-8 in: 0.335 ppm  
8-12 in: 3.3 ppm  
12-21 in: 7.27 ppm  
21-24 in: 28.4 ppm; 6.43 ppm  
24-31 in: 20.7 ppm

PCSD-SA5-13  
0-2 in: 0.3 ppm  
2-12 in: No Data  
12-21.5 in: 1.95 ppm  
21.5-26.5 in: 9.5 ppm  
26.5-30 in: 130 ppm  
30-33.5 in: 91 ppm  
33.5-43.5 in: 111 ppm  
43.5-50 in: 30 ppm

SA5-C Surface Area: 1,578.872 yd²  
Total Volume: 2,040 yd³  
TSCA Volume: 1,448 yd³  
PCB Mass: 533.15 lbs

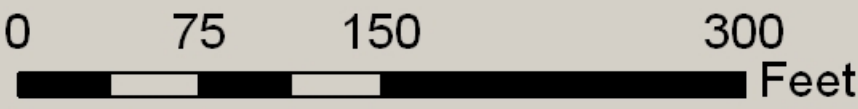
PCT26-9  
0-2 in: 0.21 ppm  
2-6 in: 0.37 ppm  
6-12 in: 100 ppm  
12-24 in: 300 ppm; 150 ppm  
24-29 in: 110 ppm  
29-36 in: 2.45 ppm  
36-40 in: 0.439 ppm

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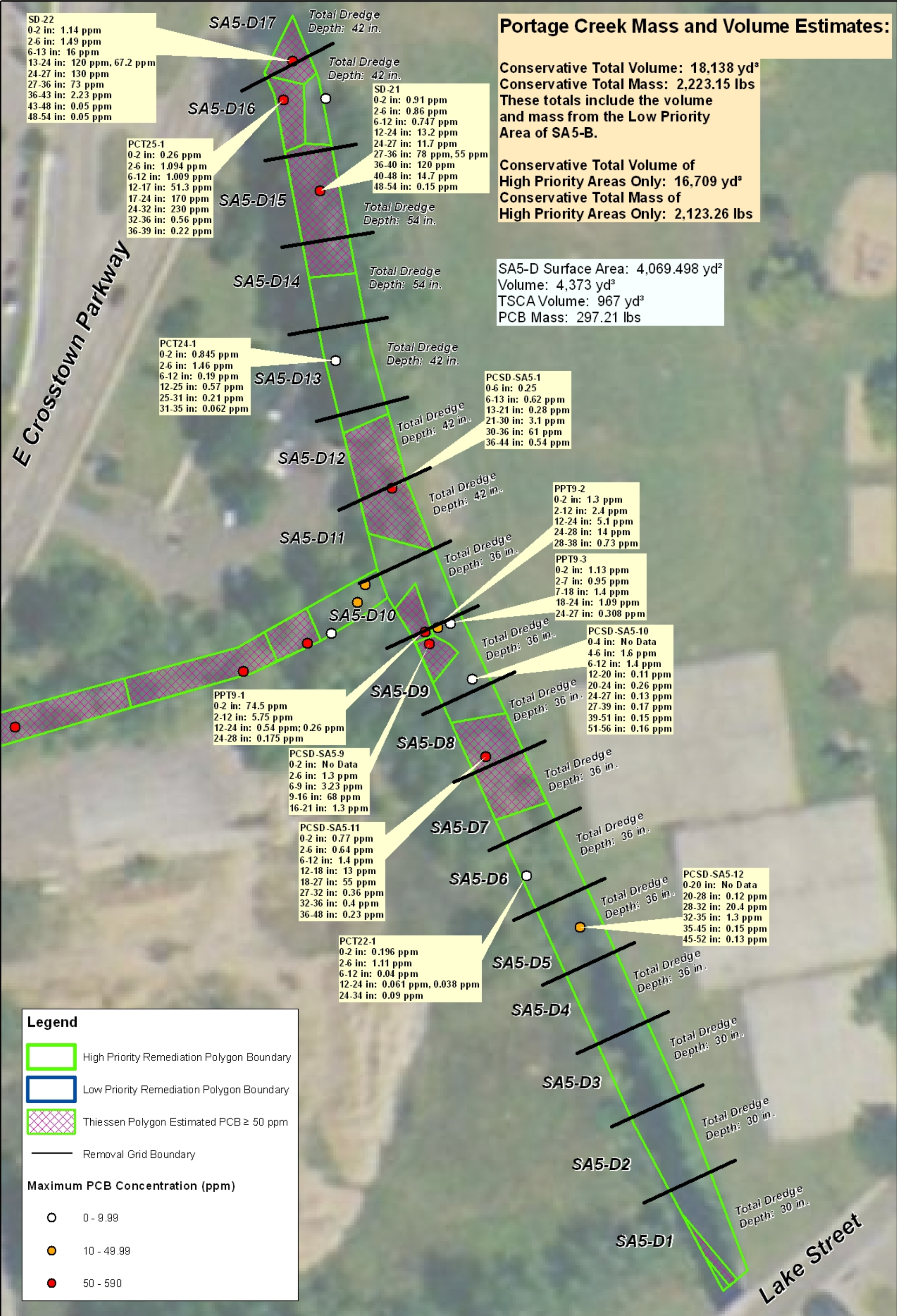
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Projection: UTM Zone 16N  
Datum: NAD 83



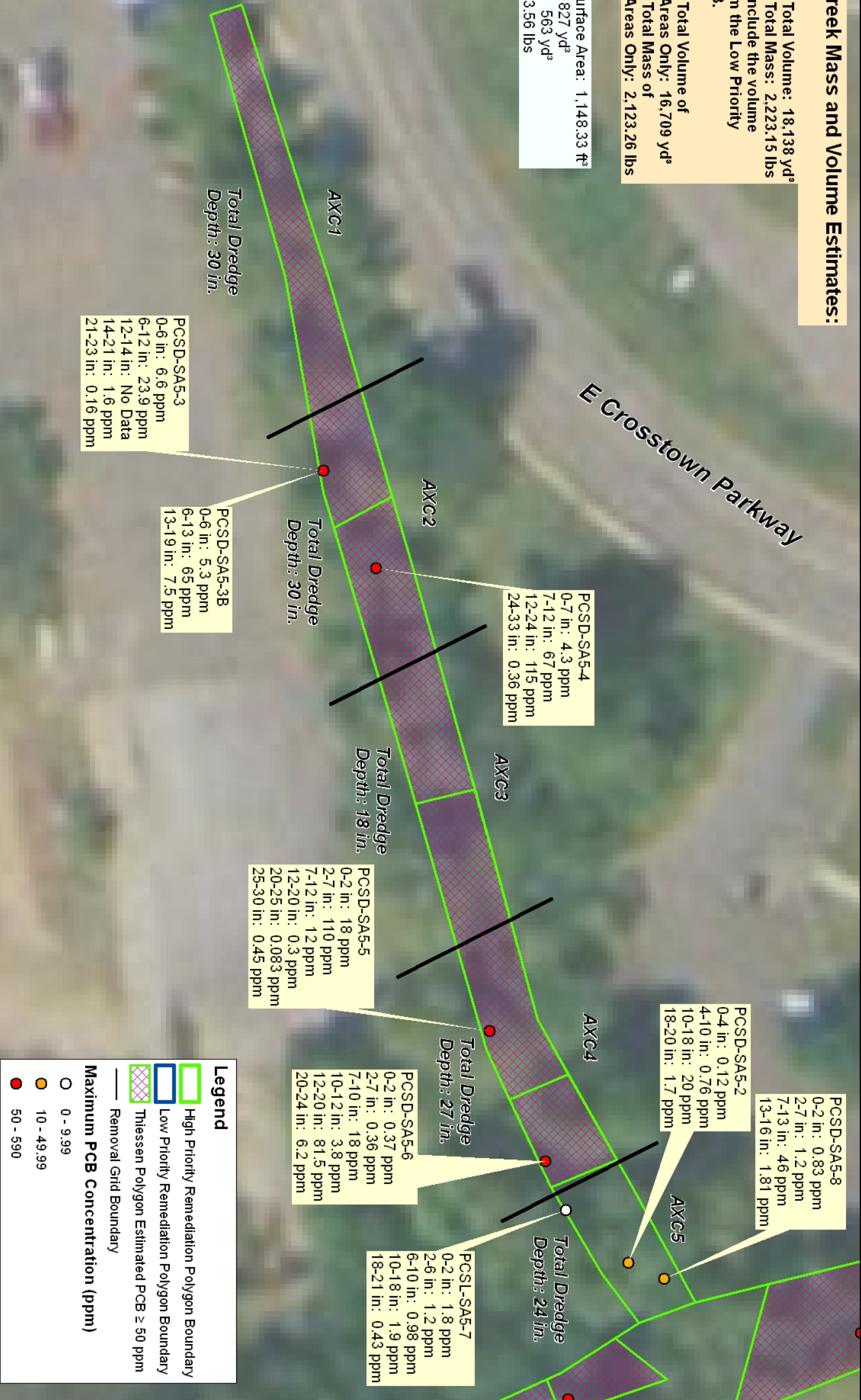


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Axtell Creek Surface Area: 1,148.33 ft²  
Total Volume: 827 yd³  
TSCA Volume: 563 yd³  
PCB Mass: 123.56 lbs





Stockbridge Avenue

Reed Court

Egleston Avenue

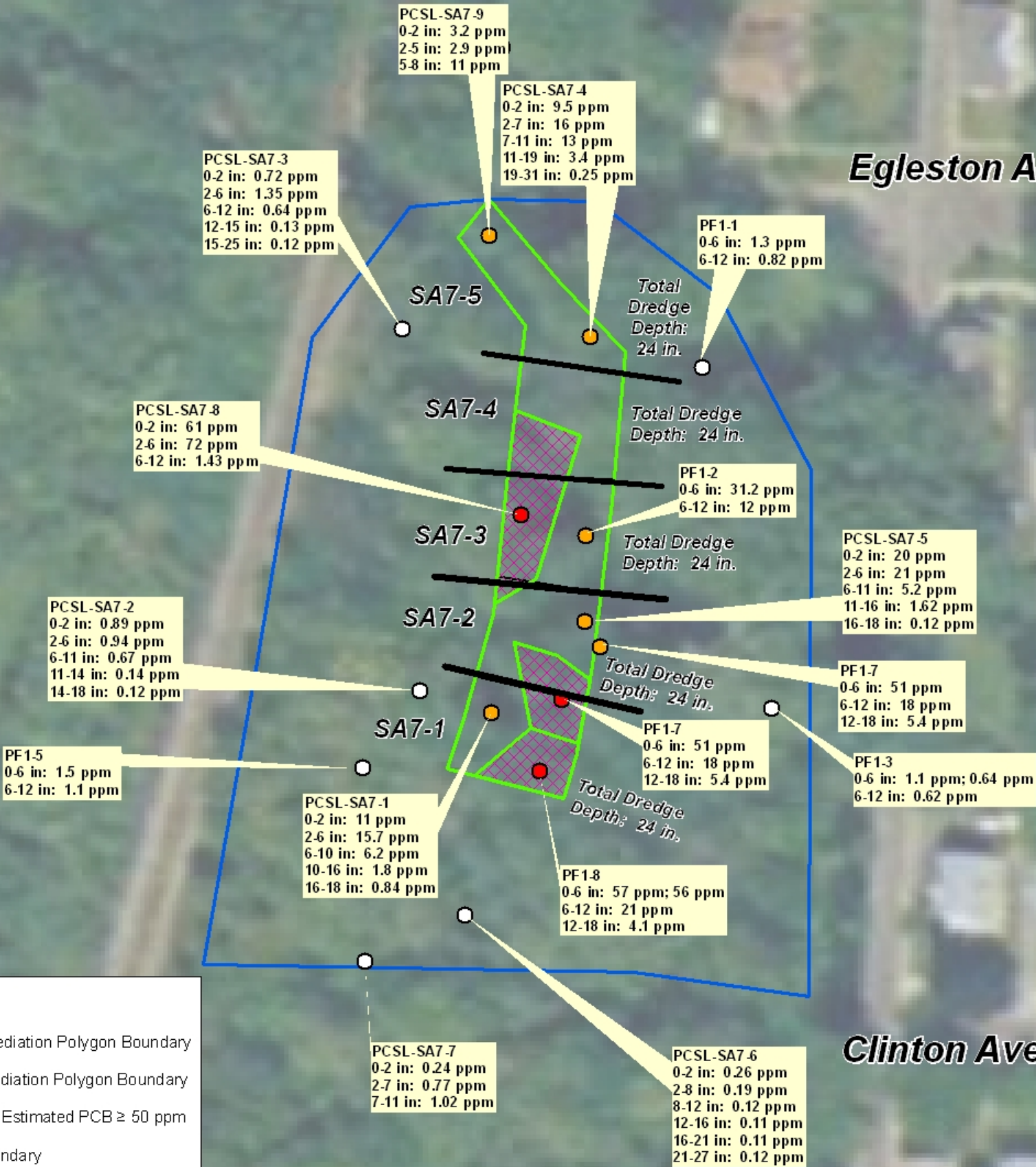
Clinton Avenue

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SA7 Surface Area: 1,239.25 yd²  
Total Volume: 826 yd³  
TSCA Volume: 131 yd³  
PCB Mass: 34.52 lbs



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