

Mr. Eric Amadi  
Hydrogeologist, SER R&R Program  
Wisconsin Department of Natural Resources  
2300 N. Martin Luther King Jr. Dr.  
Milwaukee, WI 53212

**Addendum to Remedial Action Options Report (RAOR) and Pre-Design Sampling Work Plan - Connell Aluminum Properties, LLC  
Former Koppers Tar Plant and Wabash Alloys Site  
9100 S. 5<sup>th</sup> Avenue, Oak Creek, WI 53154  
BRRTS# 02-41-553761, FID#241379050  
Connell VPLE BRRTS #:06-41-560068**

March 13, 2020

**City of Oak Creek Utility Corridor Lot 1  
9170 South 5<sup>th</sup> Avenue, Oak Creek, WI 53154  
BRRTS#: 02-41-561425, FID #:341074470  
VPLE BRRTS#: 06-41-561426**

Ramboll  
234 W. Florida Street  
Fifth Floor  
Milwaukee, WI 53204  
USA

Dear Mr. Amadi:

On behalf of Connell Aluminum Properties, LLC, Ramboll (formerly Natural Resource Technology, NRT/OBG) is providing this Addendum to the Remedial Action Options Report (RAOR) and Pre-Design Sampling Work Plan. As a reminder, the original RAOR was submitted jointly by NRT (on behalf of Connell) and Tetra Tech (on behalf of Beazer East, Inc.), dated December 30, 2014. We are requesting approval of Connell's portion of the RAOR and also this Pre-Design Sampling Work Plan.

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Ref. 68002

This Addendum letter addresses the WDNR's comment letter dated October 25, 2017 provided to Connell regarding *Review of Site Investigation and Remedial Action Options Reports, Former Koppers Tar Plant and Wabash Alloys Facility*. Reference is made in this letter report and/or on attached figures to the remedial actions proposed to be completed by Beazer East, Inc. including DNAPL tar removal, and barriers for PAH-contaminated soil using soil cover or potentially mobile tar capping using geomembrane.

**RAOR SUMMARY AND WDNR COMMENTS**

This Addendum letter follows the organization of the WDNR comment letter starting with addressing Section A, Section B, and lastly Section C comments.

The Sections pertain to main concepts from the RAOR including:

**Section A:** Defining the Excavation Limits of PCBs above 10 mg/kg

**Section B:** Defining the Cap Extent for PCBs and arsenic over RCLs (Western Area)

**Section C:** Extending and Defining the Cap Extent for PCBs, arsenic and mercury over RCLs (Eastern Area)

The following items are described in detail that serve to supplement the original RAOR, and where needed, it is pointed out where a figure is meant to update a previous RAOR figure. Since many figures referenced were figures from the Site Investigation (SI) report, these too were included and pointed out that they originated from the SI report figure list.

**SECTION A COMMENTS – EXCAVATION EXTENTS**

Ramboll has revised the following figures to illustrate the locations of the additional PCB samples that WDNR suggested were needed for defining excavation limits above 10 mg/kg.

- Figure 1 – Revised RAOR Figure 9 – PCB Soil Excavation and Disposal (Alternative S-4) for purposes of showing all 6 planned excavation areas (Western Areas 1 through 5 and Eastern Area 6) and showing all 10 locations by comment number (A1 through A10) that WDNR identified as additional PCB sampling locations. Note 1 was revised and Notes 2 and 3 were added to include notes about the planned excavation confirmation sampling and sampling of the below grade concrete foundations where PCBs are identified in soil.
- Figure 2 – Revised Figure C40 SI Report - PCB Soil Data – North Yard TSCA Area for purposes of showing more specifically the additional PCB sampling locations related to comments A1 through A5, and A7.
- Figure 3 – Revised Figure C41 SI Report – PCB Soil Data – South Yard TSCA Area for purposes of showing more specifically the additional PCB sampling locations related to comments A6 and A8.
- Figure 4 – Revised Figure C42 SI Report – PCB Soil Data – South Exterior TSCA Area for purposes of showing more specifically the additional PCB sampling locations related to comments A9 and A10.

The following is a brief description of the excavation confirmation sampling plan that is proposed, and will be expanded upon in the Remedial Design Report to include a table(s) of the Confirmation Sampling Plan.

**Pre-Design Sampling**

Depending on the sampling area (shown as A1 through A10), one to five borings are planned with samples to be collected in 1-foot intervals (0-1 ft, 1-2 ft, etc.) for PCB analysis, as done previously. Borings will be advanced to 8 feet total depth. Initial samples to be analyzed will target those depth intervals that indicated the highest concentrations nearby and the intervals surrounding the highest. The remaining samples will be kept cool for possible analysis, pending initial results. The sample results will be used to refine the excavation areas shown in the Remedial Design Report. If certain samples were not able to be collected due to accessibility issues or additional samples are determined to be needed, these will be detailed in the Remedial Design Report and will be collected as part of the *Pre-Remedial Implementation Sampling* as described below.

Based on the soil results, a plan for sampling and analyzing select below grade concrete foundations will be included in the Remedial Design Report. The samples of concrete will be more easily accessible once an excavator and concrete breaker is mobilized for the remedial implementation.

**Pre-Remedial Implementation Sampling and Excavation Confirmation Sampling**

Additional soil and concrete foundation samples that are needed for sufficient characterization for removal will be collected as part of the pre-remedial implementation step, which will be detailed in the Remedial

Design Report. These samples will be discrete samples, to be analyzed with the same laboratory procedure as the excavation confirmation samples described below.

Excavation confirmation samples, to verify both TSCA removal extents are met and cleanup goals are met, will be collected at a grid spacing appropriate for each excavation area (on the order of 15 to 30 ft). A mobile laboratory certified in Wisconsin for PCB Aroclor method 8082 may be used to expedite sample results and delineation of the required remedial extent. A fixed laboratory analyzing PCB Aroclor method 8082 with quick turn-around times may also be used for PCBs, and will be used for analysis of metals confirmation samples.

For PCB confirmation samples on base and sidewalls, a composite sample is proposed in accordance with USEPA 40CR 761.61 sample collection procedures. The proposed composite sampling will use equally spaced sampling points with equal volumes homogenized for one sample collection. Discrete samples are proposed to be collected for metals analyses, per WDNR sample requirements.

### **Resampling**

If the clean-up goal is exceeded in confirmation samples (greater than 10 mg/kg total PCBs), additional excavation will be performed, and subsequent confirmation samples will be collected. This approach will continue until the clean-up goal is met, or other physical restrictions are encountered. Samples may be collected to pre-define the excavation lateral limit and those sample results will be used as the cleanup confirmation samples.

## **SECTION B COMMENTS – CAP EXTENTS WESTERN**

Ramboll has revised the following figures to illustrate the locations of the additional samples that WDNR suggested were needed for defining the cap extents for PCBs and arsenic, in select locations, above non-industrial RCLs in the western area.

- Figure 5 – Revised RAOR Figure 8 - PCB and Arsenic Soil Barrier (Alternative S-3) for purposes of showing the revised estimated cap extent in both the western and eastern areas.
- Figure 6 – Revised Figure C35 SI Report – PCB Aroclor 1242/1248/1254/1260 Soil Concentrations (0-4 feet bgs) for purposes of showing more specifically the additional PCB sampling locations related to comments B1, B2, B4 and B5.
- Figure 7 – Revised Figure C1 SI Report – Arsenic Soil Concentrations (0-4 ft bgs) for purposes of showing more specifically the additional arsenic sampling location related to comment B3.

In Section C below, Ramboll has included a brief description of the pre-design and cap extent verification sampling plan that is proposed for both Sections B and C; and will be expanded upon in the Remedial Design Report to include a table(s) of the Confirmation Sampling Plan.

## **SECTION C COMMENTS – CAP EXTENTS EASTERN**

Based on NRT's email dated November 22, 2017 and the WDNR's responses dated August 8, 2018 and August 10, 2018, the eastern remedial plan includes both capping and excavation for PCBs and capping for arsenic, in both wetland and non-wetland areas. One sample location (B-12) indicated an elevated mercury concentration above non-industrial RCLs but is planned to be excavated with the DNAPL tar removal effort. The WDNR Wetlands Program has confirmed that these wetlands can be disturbed to clean-up the contamination, with required wetland permits and possible mitigation credits.

Ramboll has prepared a new figure (Figure 8) to illustrate the additional proposed capping extent in the eastern area, to include both wetland and non-wetland areas that exceed respective non-industrial RCLs.

- Figure 8 – PCB and Arsenic Soil Barrier – East Area for purposes of showing the additional proposed cap extent and the additional PCB, arsenic and mercury sampling locations related to comments C1 through C8. Sampling locations related to comments C4, C5, C6, C7 and C8 are likely to be performed on the City Utility Corridor property, and as such, access for these will be requested from the City.

The following is a brief description of the pre-design and cap extent verification sampling plan that is proposed for both Sections B and C, and will be expanded upon in the Remedial Design Report to include a table(s) of the Confirmation Sampling Plan.

### **Pre-Design Sampling**

Depending on the sampling area (shown as B1 through B-5 and C1 through C8), one to three borings are planned with samples to be collected in 2-foot intervals (both 0-2 ft, 2-4 ft) for PCB analysis as done previously. Borings will be advanced to 4 feet total depth. The sample results will be used to refine the cap extent areas shown in the Remedial Design Report, where appropriate. If certain samples are not able to be collected due to accessibility issues or additional samples are determined to be needed, these will be detailed in the Remedial Design Report and will be collected as part of the *Pre-Cap Installation Extent Sampling* as described below.

### **Pre-Cap Installation Extent Verification Sampling**

Additional soil samples needed, if any, for verification of cap extent will be collected as part of the pre-cap installation step, which will be detailed in the Remedial Design Report. These samples will be discrete samples collected in 2-foot intervals (both 0-2 ft, 2-4 ft). A mobile laboratory certified in Wisconsin for PCB Aroclor method 8082 may be used to expedite sample results and verification of the required cap extent. A fixed laboratory analyzing PCB Aroclor method 8082 with quick turn-around times may also be used for PCBs, and will be used for analysis of metals verification samples (if any).

### **Chromium Data (Comment C2)**

On January 27, 2014, NRT resubmitted the SI Report Figures C4 (Chromium, 0-4 ft bgs) and C8 (Silver, 0-4 ft bgs) after realizing an error on the figures that did not match the tables for chromium and silver (NRT transmittal dated January 27, 2014 is attached). Note that the data for B-08 has been corrected on these figures and are attached.

## **PLANNED FUTURE ACTIONS**

Upon WDNR approval of Connell's portion of the RAOR and Pre-Design Work Plan, Ramboll will proceed with the pre-design sampling. Following this, a Remedial Design Report will be prepared to address Connell's NR 700 responsibilities as part of the VPLE program.

Please contact me if you have any questions or comments regarding this Addendum letter and Work Plan.

Sincerely,



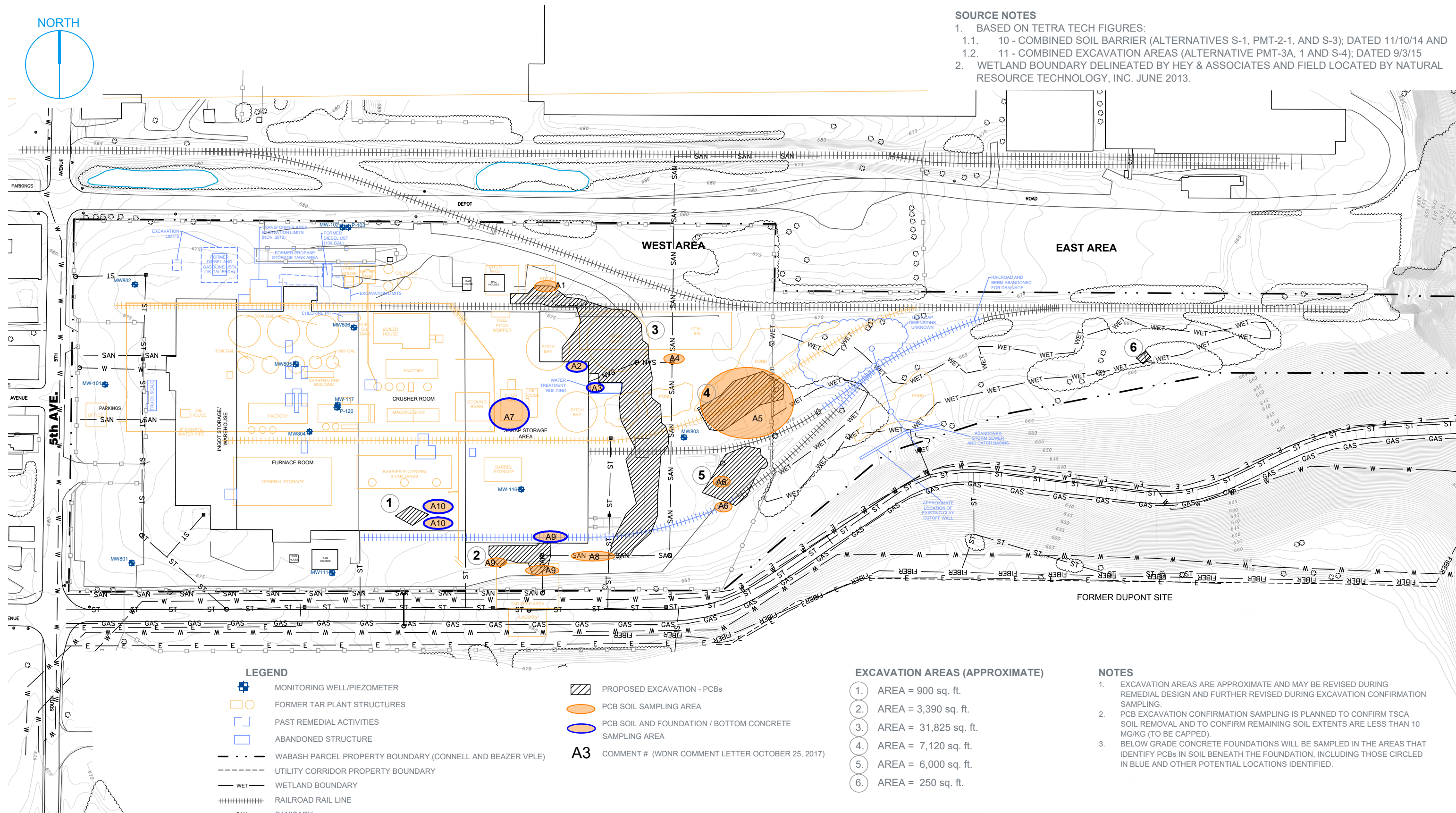
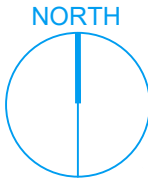
**Julie A. Zimdars, PE**  
Senior Managing Engineer

D +1 414 837 3564

[julie.zimdars@ramboll.com](mailto:julie.zimdars@ramboll.com)

Attachments: Figure 1 – Revised RAOR Figure 9 – PCB Soil Excavation and Disposal (Alternative S-4)  
Figure 2 – Revised Figure C40 SI Report - PCB Soil Data – North Yard TSCA  
Figure 3 – Revised Figure C41 SI Report – PCB Soil Data – South Yard TSCA Area  
Figure 4 – Revised Figure C42 SI Report – PCB Soil Data – South Exterior TSCA Area  
Figure 5 – Revised RAOR Figure 8 - PCB and Arsenic Soil Barrier (Alternative S-3)  
Figure 6 – Revised Figure C35 SI Report – PCB Aroclor 1242/1248/1254/1260 Soil Concentrations (0-4 feet bgs)  
Figure 7 – Revised Figure C1 SI Report – Arsenic Soil Concentrations (0-4 ft bgs)  
Figure 8 – New Figure– PCB and Arsenic Soil Barrier – East Area  
NRT Transmittal of the Corrected Figures C4 and C8, SI Report, dated January 27, 2014  
Figure C4 SI Report (Revised) - Chromium Soil Concentrations (0-4 ft bgs) dated Jan. 23, 2014  
Figure C8 SI Report (Revised) - Silver Soil Concentrations (0-4 ft bgs) dated Jan. 27, 2014

cc: Mike Kellogg, Connell Aluminum Properties, LLC  
Mike Slenska, Beazer  
Mike Noel, Tetra Tech  
Larry Haskins, City of Oak Creek



**SOURCE NOTES**

1. BASED ON TETRA TECH FIGURES:
  - 1.1. 10 - COMBINED SOIL BARRIER (ALTERNATIVES S-1, PMT-2-1, AND S-3); DATED 11/10/14 AND
  - 1.2. 11 - COMBINED EXCAVATION AREAS (ALTERNATIVE PMT-3A, 1 AND S-4); DATED 9/3/15
2. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013.

**LEGEND**

- MONITORING WELL/PIEZOMETER
- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- ABANDONED STRUCTURE
- WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VP/LE)
- UTILITY CORRIDOR PROPERTY BOUNDARY
- WETLAND BOUNDARY
- RAILROAD RAIL LINE
- SANITARY
- STORM SEWER
- NATURAL GAS
- WATER MAIN
- ELECTRICAL
- FIBER OPTIC
- MANHOLE
- INLET/CATCH BASIN
- PROPOSED EXCAVATION - PCBs
- PCB SOIL SAMPLING AREA
- PCB SOIL AND FOUNDATION / BOTTOM CONCRETE SAMPLING AREA
- A3** COMMENT # (WDNR COMMENT LETTER OCTOBER 25, 2017)

**EXCAVATION AREAS (APPROXIMATE)**

1. AREA = 900 sq. ft.
2. AREA = 3,390 sq. ft.
3. AREA = 31,825 sq. ft.
4. AREA = 7,120 sq. ft.
5. AREA = 6,000 sq. ft.
6. AREA = 250 sq. ft.

**NOTES**

1. EXCAVATION AREAS ARE APPROXIMATE AND MAY BE REVISED DURING REMEDIAL DESIGN AND FURTHER REVISED DURING EXCAVATION CONFIRMATION SAMPLING.
2. PCB EXCAVATION CONFIRMATION SAMPLING IS PLANNED TO CONFIRM TSCA SOIL REMOVAL AND TO CONFIRM REMAINING SOIL EXTENTS ARE LESS THAN 10 MG/KG (TO BE CAPPED).
3. BELOW GRADE CONCRETE FOUNDATIONS WILL BE SAMPLED IN THE AREAS THAT IDENTIFY PCBs IN SOIL BENEATH THE FOUNDATION, INCLUDING THOSE CIRCLED IN BLUE AND OTHER POTENTIAL LOCATIONS IDENTIFIED.

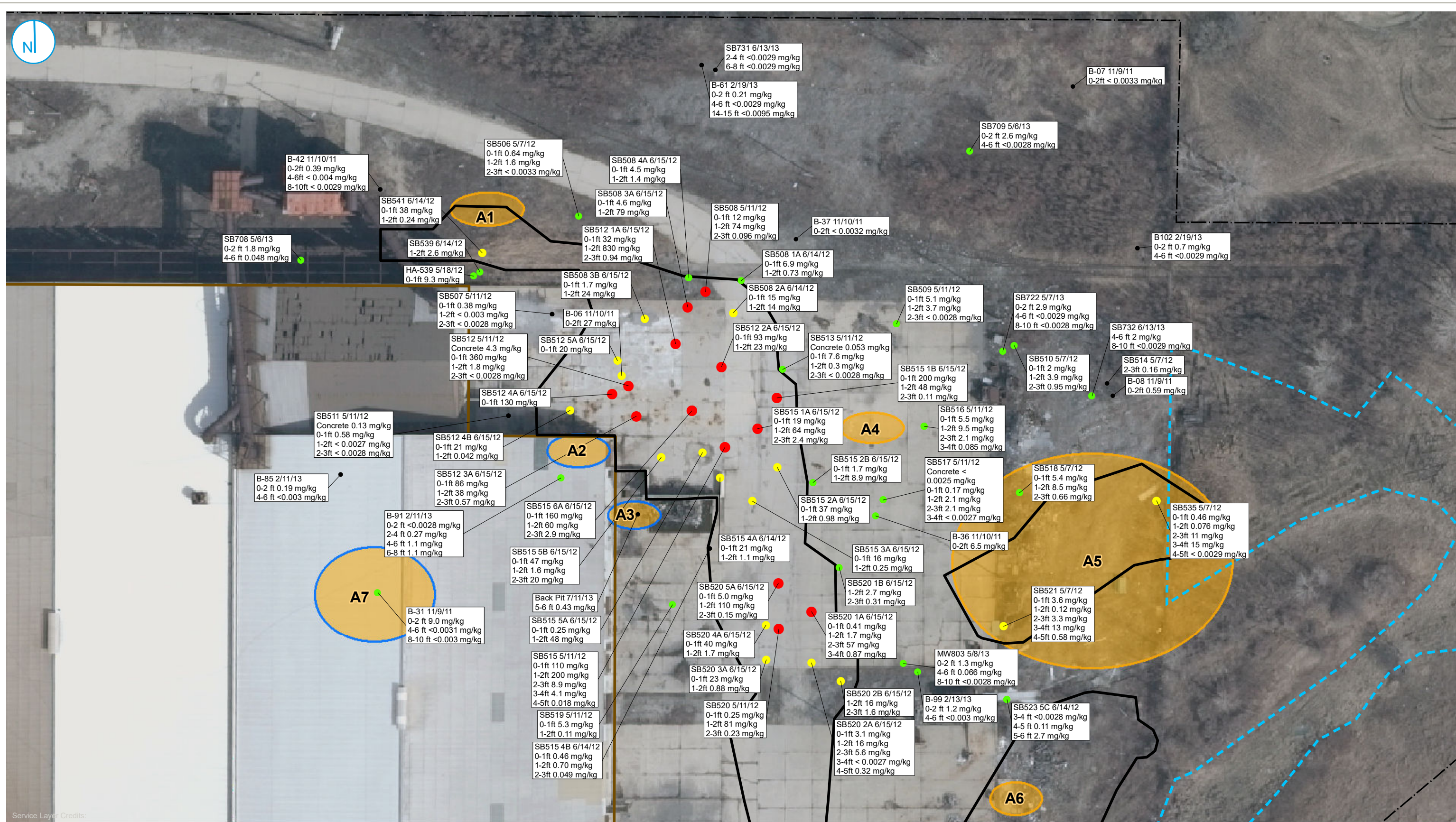
**PCB SOIL EXCAVATION AND DISPOSAL (ALTERNATIVE S-4)**

**FIGURE 1**  
FIGURE 9 (REV. RAOR REPORT)

**RAOR ADDENDUM**  
**FORMER WABASH ALLOYS**  
9100 SOUTH 5TH AVENUE  
OAK CREEK, WISCONSIN

RAMBOLL US CORPORATION  
A RAMBOLL COMPANY





**SOIL SAMPLE LOCATIONS**

- TOTAL PCB ≥ 50 mg/Kg
- TOTAL PCB >10 - <50 mg/Kg
- TOTAL PCB >1 - ≤10 mg/Kg
- TOTAL PCB ≤1 mg/Kg

- - - WETLAND BOUNDARY
- - - PROPERTY BOUNDARY
- BUILDING FOOTPRINT
- PCB SOIL AND FOUNDATION/BOTTOM CONCRETE SAMPLING AREA
- PCB SOIL SAMPLING AREA
- APPROXIMATE PROPOSED PCB EXCAVATION BOUNDARY



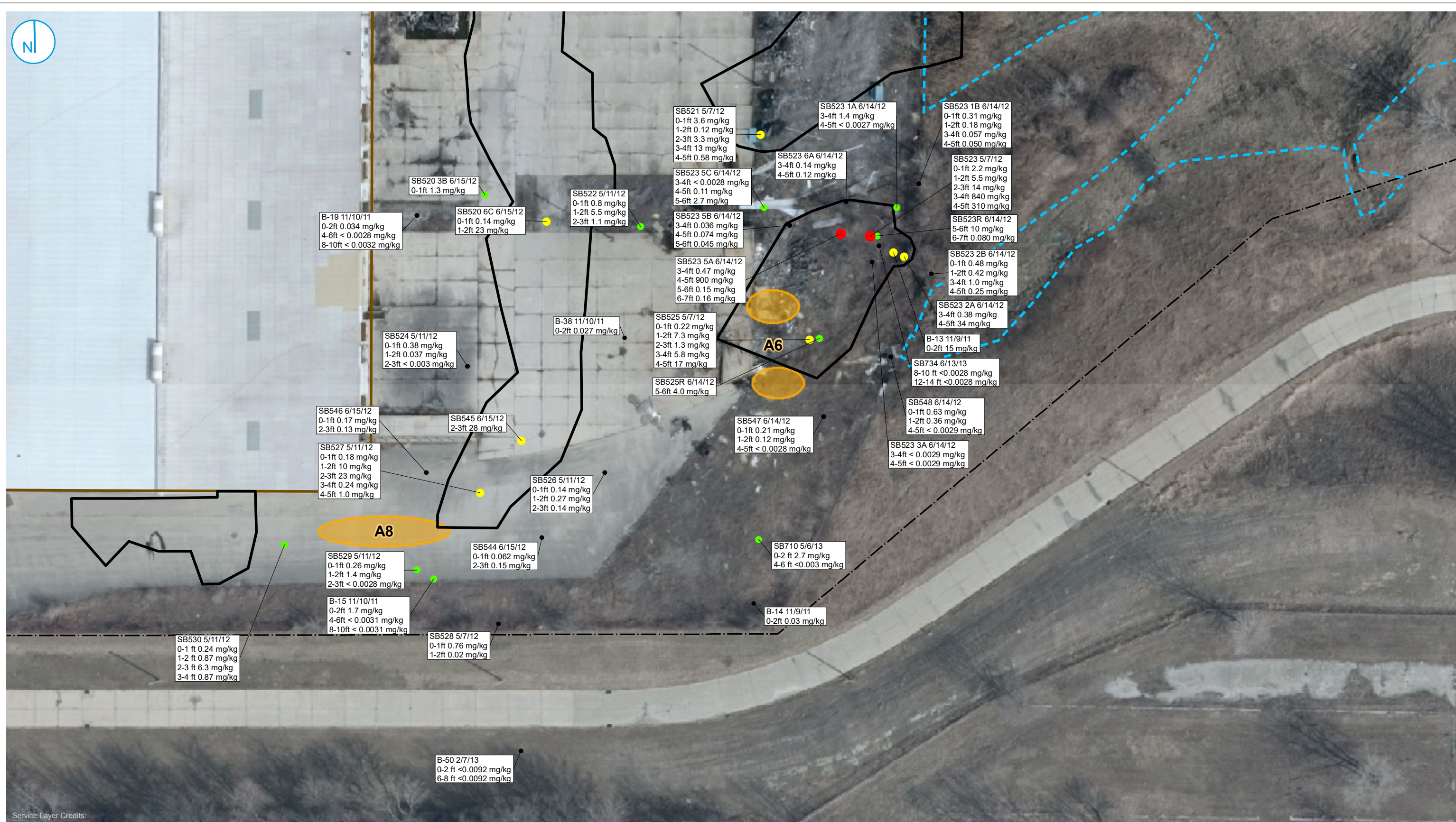
**PCB SOIL DATA - NORTH YARD TSCA AREA**

**FIGURE 2**  
**FIGURE C40 (REV. SI REPORT)**

**RAOR ADDENDUM**  
**FORMER WABASH ALLOYS**  
9100 SOUTH 5TH AVENUE  
OAK CREEK, WISCONSIN

RAMBOLL US CORPORATION  
A RAMBOLL COMPANY





**SOIL SAMPLE LOCATIONS**

- TOTAL PCB ≥ 50 mg/Kg
- TOTAL PCB >10 - <50 mg/Kg
- TOTAL PCB >1 - ≤10 mg/Kg
- TOTAL PCB ≤1 mg/Kg

--- WETLAND BOUNDARY  
 --- PROPERTY BOUNDARY  
 ■ BUILDING FOOTPRINT  
 ○ PCB SOIL AND FOUNDATION/BOTTOM CONCRETE SAMPLING AREA  
 ○ PCB SOIL SAMPLING AREA  
 □ APPROXIMATE PROPOSED PCB EXCAVATION BOUNDARY

0 25 50 Feet

**PCB SOIL DATA - SOUTH YARD TSCA AREA**

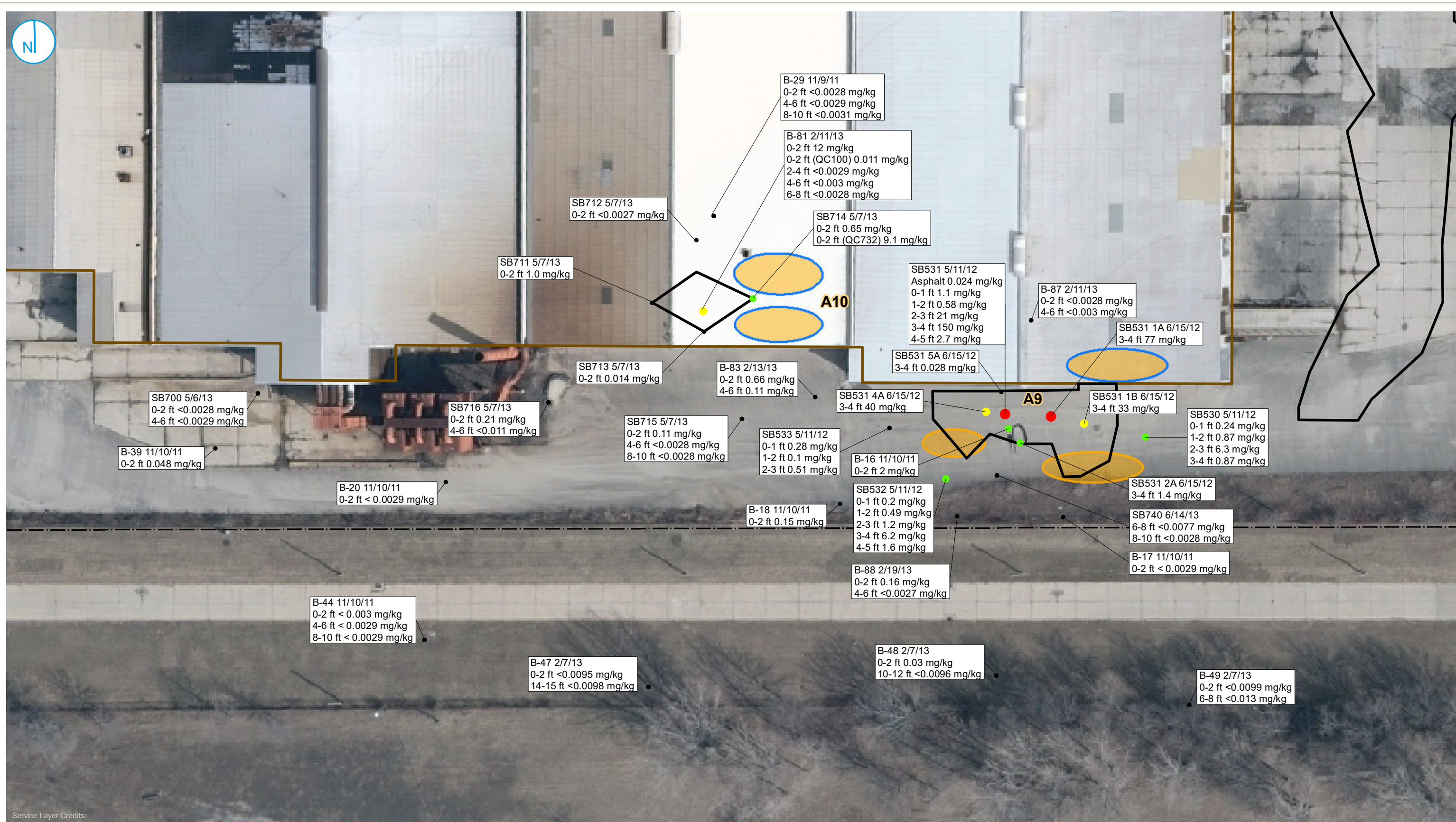
**FIGURE 3**  
**FIGURE C41 (REV. SI REPORT)**

**RAOR ADDENDUM**  
**FORMER WABASH ALLOYS**  
 9100 SOUTH 5TH AVENUE  
 OAK CREEK, WISCONSIN

RAMBOLL US CORPORATION  
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- SOIL SAMPLE LOCATIONS**
- TOTAL PCB ≥ 50 mg/Kg
  - TOTAL PCB >10 - <50 mg/Kg
  - TOTAL PCB >1 - ≤10 mg/Kg
  - TOTAL PCB ≤1 mg/Kg
- PROPERTY BOUNDARY** (---)
- BUILDING FOOTPRINT** (---)
- PCB SOIL AND FOUNDATION/BOTTOM CONCRETE SAMPLING AREA** (Orange Oval)
- PCB SOIL SAMPLING AREA** (Yellow Oval)
- APPROXIMATE PROPOSED PCB EXCAVATION BOUNDARY** (Black Outline)



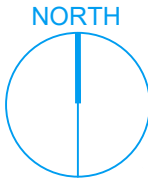
**PCB SOIL DATA - SOUTH EXTERIOR TSCA AREA**

**RAOR ADDENDUM  
FORMER WABASH ALLOYS**  
9100 SOUTH 5TH AVENUE  
OAK CREEK, WISCONSIN

**FIGURE 4  
FIGURE C42 (REV. SI REPORT)**

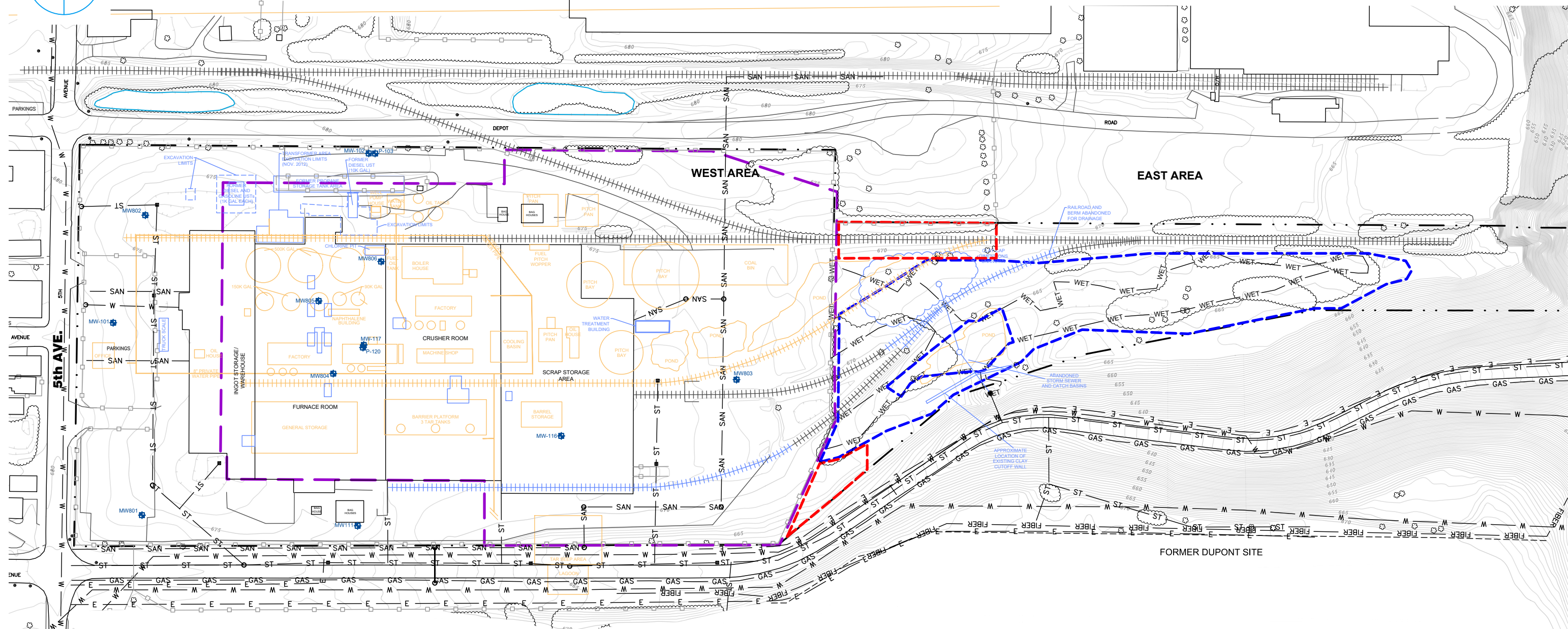
RAMBOLL US CORPORATION  
A RAMBOLL COMPANY





**SOURCE NOTES**

1. BASED ON TETRA TECH FIGURES:
  - 1.1. 10 - COMBINED SOIL BARRIER (ALTERNATIVES S-1, PMT-2-1, AND S-3); DATED 11/10/14 AND
  - 1.2. 11 - COMBINED EXCAVATION AREAS (ALTERNATIVE PMT-3A, 1 AND S-4); DATED 9/3/15
2. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013.



**LEGEND**

- MONITORING WELL/PIEZOMETER
- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- ABANDONED STRUCTURE
- WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VP/LE)
- UTILITY CORRIDOR PROPERTY BOUNDARY
- WETLAND BOUNDARY
- RAILROAD RAIL LINE
- SANITARY
- STORM SEWER
- NATURAL GAS
- WATER MAIN
- ELECTRICAL
- FIBER OPTIC
- MANHOLE
- INLET/CATCH BASIN
- PROPOSED COVER - PCBs AND ARSENIC  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (497,162 FT<sup>2</sup>)
- PROPOSED COVER - ARSENIC ONLY  
- 24" GENERAL FILL/ROOTING ZONE (22,257 FT<sup>2</sup>)
- PROPOSED COVER - PCBs ONLY  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (112,243 FT<sup>2</sup>)

**NOTES**

1. BARRIER LIMITS ARE APPROXIMATE AND MAY BE REVISED DURING REMEDIAL DESIGN AND POTENTIALLY FURTHER REVISED DURING REMEDY IMPLEMENTATION.

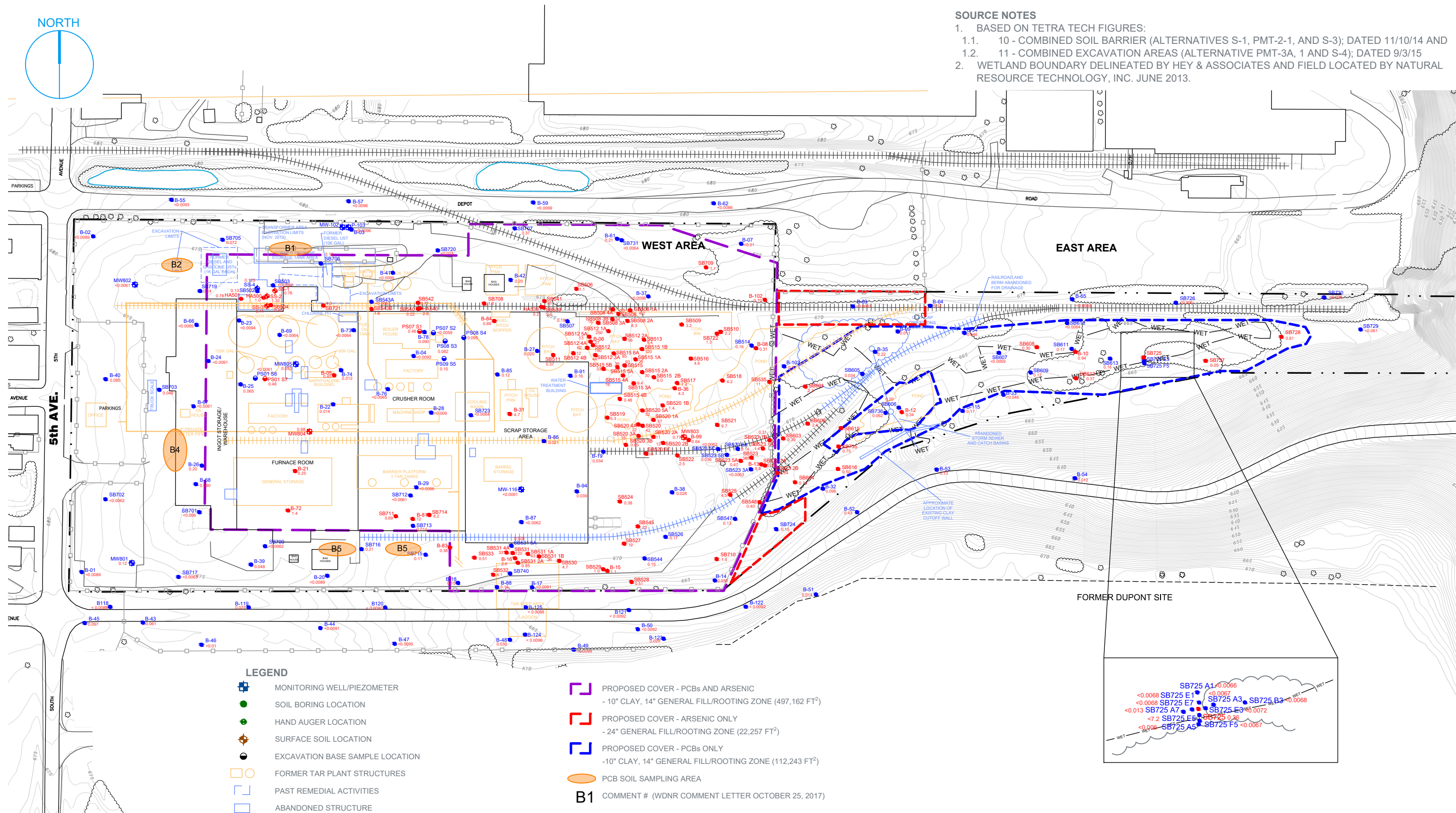
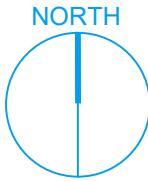
**PCB AND ARSENIC SOIL BARRIER (ALTERNATIVE S-3)**

**FIGURE 5**  
FIGURE 8 (REV. RAOR REPORT)

**RAOR ADDENDUM**  
**FORMER WABASH ALLOYS**  
 9100 SOUTH 5TH AVENUE  
 OAK CREEK, WISCONSIN

RAMBOLL US CORPORATION  
 A RAMBOLL COMPANY





**SOURCE NOTES**

1. BASED ON TETRA TECH FIGURES:
  - 1.1. 10 - COMBINED SOIL BARRIER (ALTERNATIVES S-1, PMT-2-1, AND S-3); DATED 11/10/14 AND
  - 1.2. 11 - COMBINED EXCAVATION AREAS (ALTERNATIVE PMT-3A, 1 AND S-4); DATED 9/3/15
2. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013.

**LEGEND**

- MONITORING WELL/PIEZOMETER
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- SURFACE SOIL LOCATION
- EXCAVATION BASE SAMPLE LOCATION
- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- ABANDONED STRUCTURE
- SAMPLE LOCATION ABOVE THE NON- INDUSTRIAL DIRECT CONTACT RCL OF 0.222 mg/kg OR ABOVE THE INDUSTRIAL DIRECT CONTACT RCL OF 0.744 mg/kg FOR THE UTILITY CORRIDOR
- SAMPLE LOCATION BELOW THE APPROPRIATE NON-INDUSTRIAL DIRECT CONTACT
- 11.5 MAXIMUM PCB AROCHLOR 1242/1248/1254/1260 CONCENTRATION AT EACH LOCATION IN mg/kg FOR THE DEFINED DEPTH INTERVAL
- PROPOSED COVER - PCBs AND ARSENIC  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (497,162 FT<sup>2</sup>)
- PROPOSED COVER - ARSENIC ONLY  
- 24" GENERAL FILL/ROOTING ZONE (22,257 FT<sup>2</sup>)
- PROPOSED COVER - PCBs ONLY  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (112,243 FT<sup>2</sup>)
- PCB SOIL SAMPLING AREA
- COMMENT # (WDNR COMMENT LETTER OCTOBER 25, 2017)

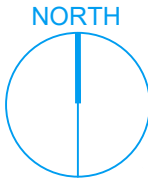
**PCB AROCHLOR 1242/1248/1254/1260 SOIL CONCENTRATIONS (0-4 FEET BGS)**

**FIGURE 6**  
FIGURE C35 (REV. SI REPORT)

**RAOR ADDENDUM**  
**FORMER WABASH ALLOYS**  
9100 SOUTH 5TH AVENUE  
OAK CREEK, WISCONSIN

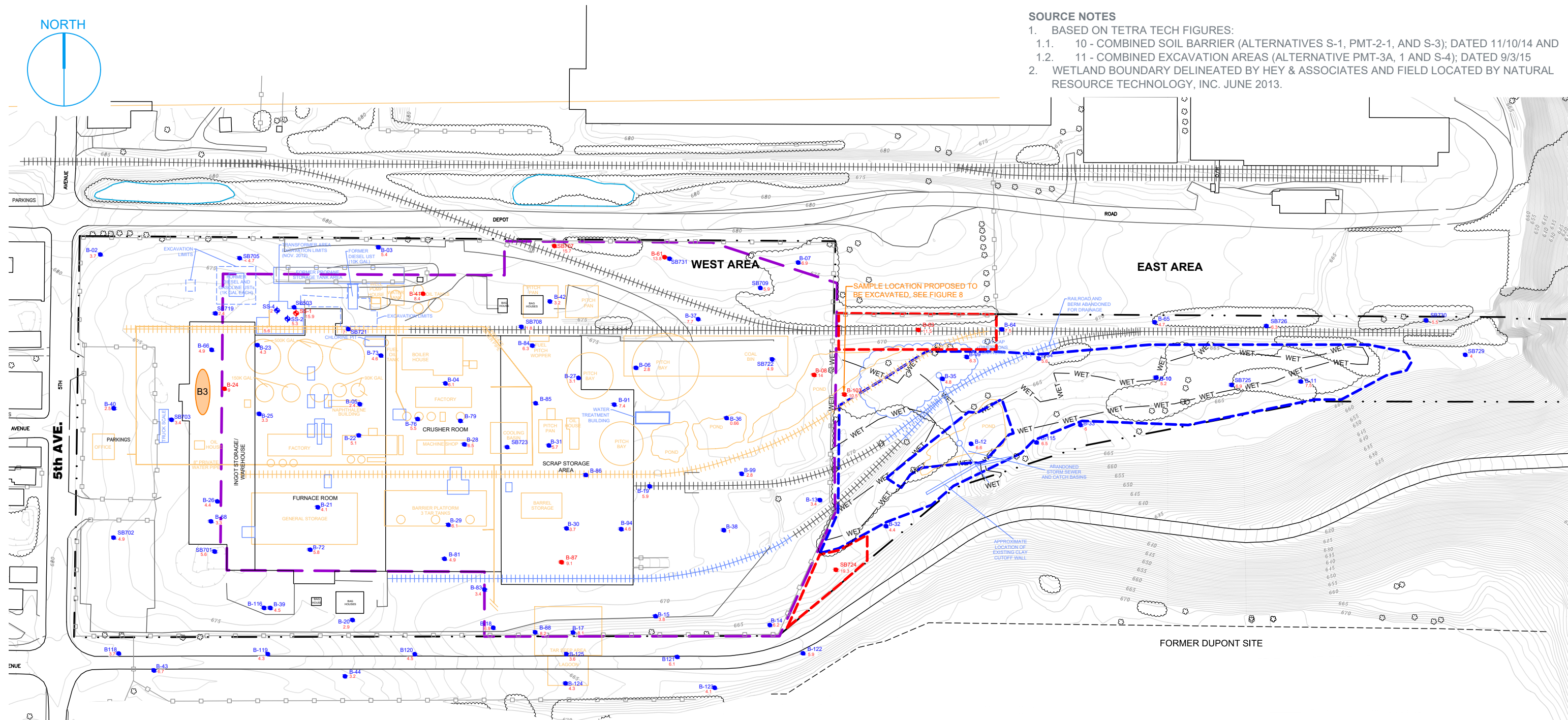
RAMBOLL US CORPORATION  
A RAMBOLL COMPANY





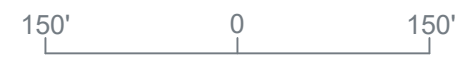
**SOURCE NOTES**

1. BASED ON TETRA TECH FIGURES:
  - 1.1. 10 - COMBINED SOIL BARRIER (ALTERNATIVES S-1, PMT-2-1, AND S-3); DATED 11/10/14 AND
  - 1.2. 11 - COMBINED EXCAVATION AREAS (ALTERNATIVE PMT-3A, 1 AND S-4); DATED 9/3/15
2. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013.



**LEGEND**

- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- ABANDONED STRUCTURE
- SAMPLE LOCATION ABOVE WDNR BACKGROUND CONCENTRATION RCL OF 8.3 mg/kg AND GROUNDWATER PATH RCL
- SAMPLE LOCATION ABOVE THE GROUNDWATER PATHWAY RCL (0.584 mg/kg)
- MAXIMUM ARSENIC CONCENTRATION AT EACH LOCATION IN mg/kg FOR THE DEFINED DEPTH INTERVAL
- PROPOSED COVER - PCBs AND ARSENIC  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (497,162 FT<sup>2</sup>)
- PROPOSED COVER - ARSENIC ONLY  
- 24" GENERAL FILL/ROOTING ZONE (22,257 FT<sup>2</sup>)
- PROPOSED COVER - PCBs ONLY  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (112,243 FT<sup>2</sup>)
- ARSENIC SOIL SAMPLING AREA
- B3** COMMENT # (WDNR COMMENT LETTER OCTOBER 25, 2017)



**ARSENIC SOIL CONCENTRATIONS (0-4 FEET BGS)**

**FIGURE 7**  
FIGURE C1 (REV. SI REPORT)

**RAOR ADDENDUM**  
**FORMER WABASH ALLOYS**  
 9100 SOUTH 5TH AVENUE  
 OAK CREEK, WISCONSIN

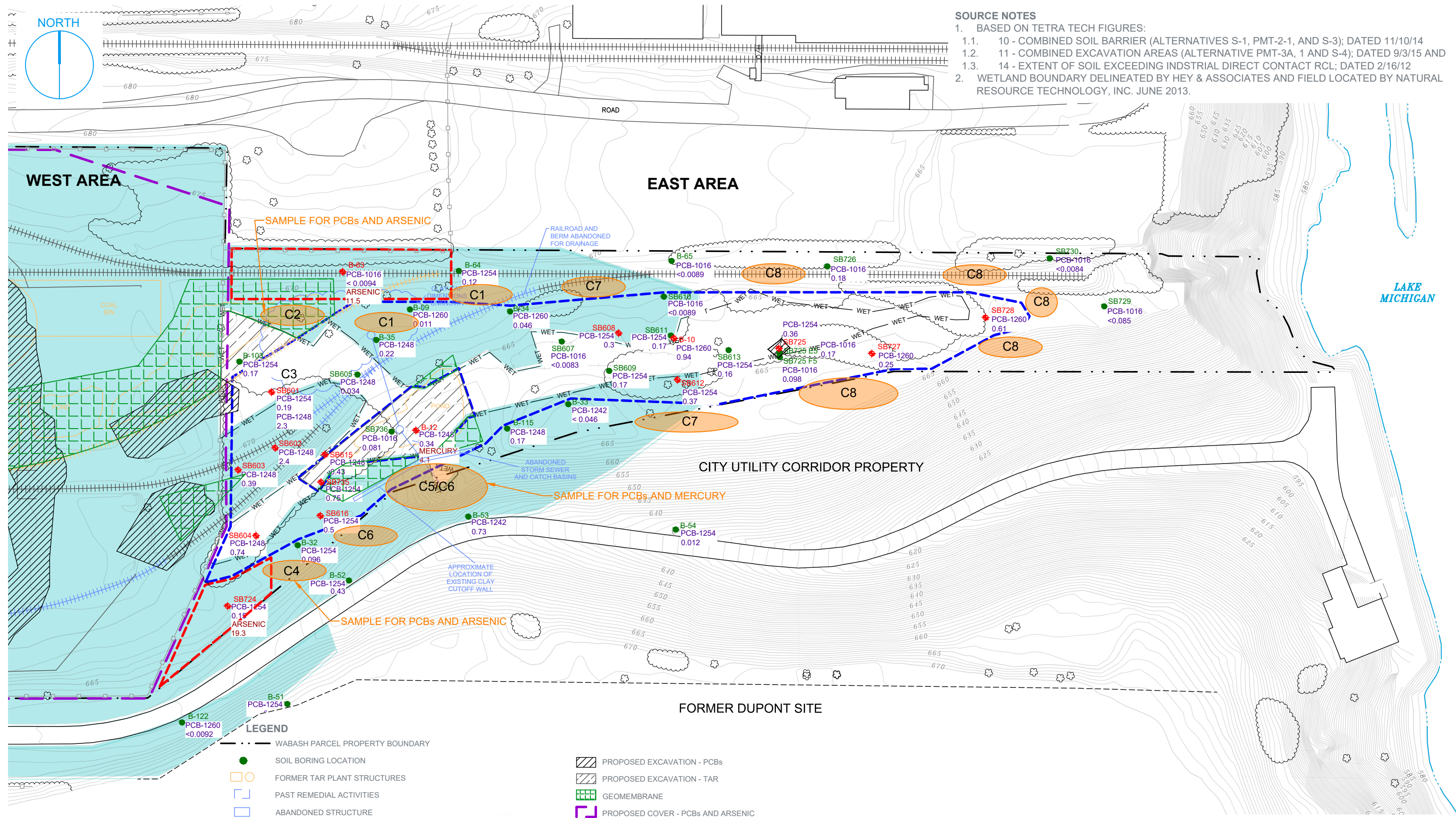
RAMBOLL US CORPORATION  
 A RAMBOLL COMPANY





**SOURCE NOTES**

1. BASED ON TETRA TECH FIGURES:
  - 1.1. 10 - COMBINED SOIL BARRIER (ALTERNATIVES S-1, PMT-2-1, AND S-3); DATED 11/10/14
  - 1.2. 11 - COMBINED EXCAVATION AREAS (ALTERNATIVE PMT-3A, 1 AND S-4); DATED 9/3/15 AND
  - 1.3. 14 - EXTENT OF SOIL EXCEEDING INDUSTRIAL DIRECT CONTACT RCL; DATED 2/16/12
2. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013.



**LEGEND**

- SOIL BORING LOCATION
- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- ABANDONED STRUCTURE
- SAMPLE LOCATION ABOVE THE NON-INDUSTRIAL DIRECT CONTACT RCL FOR PCBs AND/OR METALS OR ABOVE THE INDUSTRIAL DIRECT CONTACT RCL FOR PCBs IN THE UTILITY CORRIDOR.
- PCB-1016 <0.0094  
MAXIMUM PCB AROCHLOR CONCENTRATION AT EACH LOCATION IN mg/kg FOR THE DEFINED DEPTH INTERVAL
- ARSENIC 11.5  
MAXIMUM METAL CONCENTRATION AT EACH LOCATION EXCEEDING NON-INDUSTRIAL DIRECT CONTACT RCL IN mg/kg FOR THE DEFINED DEPTH INTERVAL
- PCB SOIL SAMPLING AREA (UNLESS OTHERWISE NOTED)
- PROPOSED EXCAVATION - PCBs
- PROPOSED EXCAVATION - TAR
- GEOMEMBRANE
- PROPOSED COVER - PCBs AND ARSENIC  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (497,162 FT<sup>2</sup>)
- PROPOSED COVER - ARSENIC ONLY  
- 24" GENERAL FILL/ROOTING ZONE (22,257 FT<sup>2</sup>)
- PROPOSED COVER - PCBs ONLY  
- 10" CLAY, 14" GENERAL FILL/ROOTING ZONE (112,243 FT<sup>2</sup>)
- PROPOSED LIMIT OF DERMAL COVER - PAHs  
- 24" GENERAL FILL/ROOTING ZONE (910,114 FT<sup>2</sup>)
- C4** COMMENT # (WDNR COMMENT LETTER OCTOBER 25, 2017)

**PCB AND ARSENIC SOIL BARRIER - EAST AREA**

**RAOR ADDENDUM  
FORMER WABASH ALLOYS**  
9100 SOUTH 5TH AVENUE  
OAK CREEK, WISCONSIN

**FIGURE 8**

RAMBOLL US CORPORATION  
A RAMBOLL COMPANY





NATURAL  
RESOURCE  
TECHNOLOGY

# TRANSMITTAL

www.naturalrt.com

<b>To:</b>	Mr. Eric Amadi	<b>Date:</b>	January 27, 2014
	Wisconsin Department of Natural Resources	<b>Project #:</b>	2095
	2300 N. Martin Luther King Jr Drive	<b>From:</b>	Rick Guenther, Julie Zimdars
	Milwaukee, WI 53212		
<b>Attn:</b>		<b>Direct No:</b>	(414) 837-3606
<b>Copy to:</b>	Mike Kellogg, Mike Slenska, Mike Noel		
<b>Re:</b>	Site Investigation Report Former Koppers Tar Plant and Wabash Alloys Site – Revised Figures		

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For Your Files  As Requested  For Review  Approve & Return

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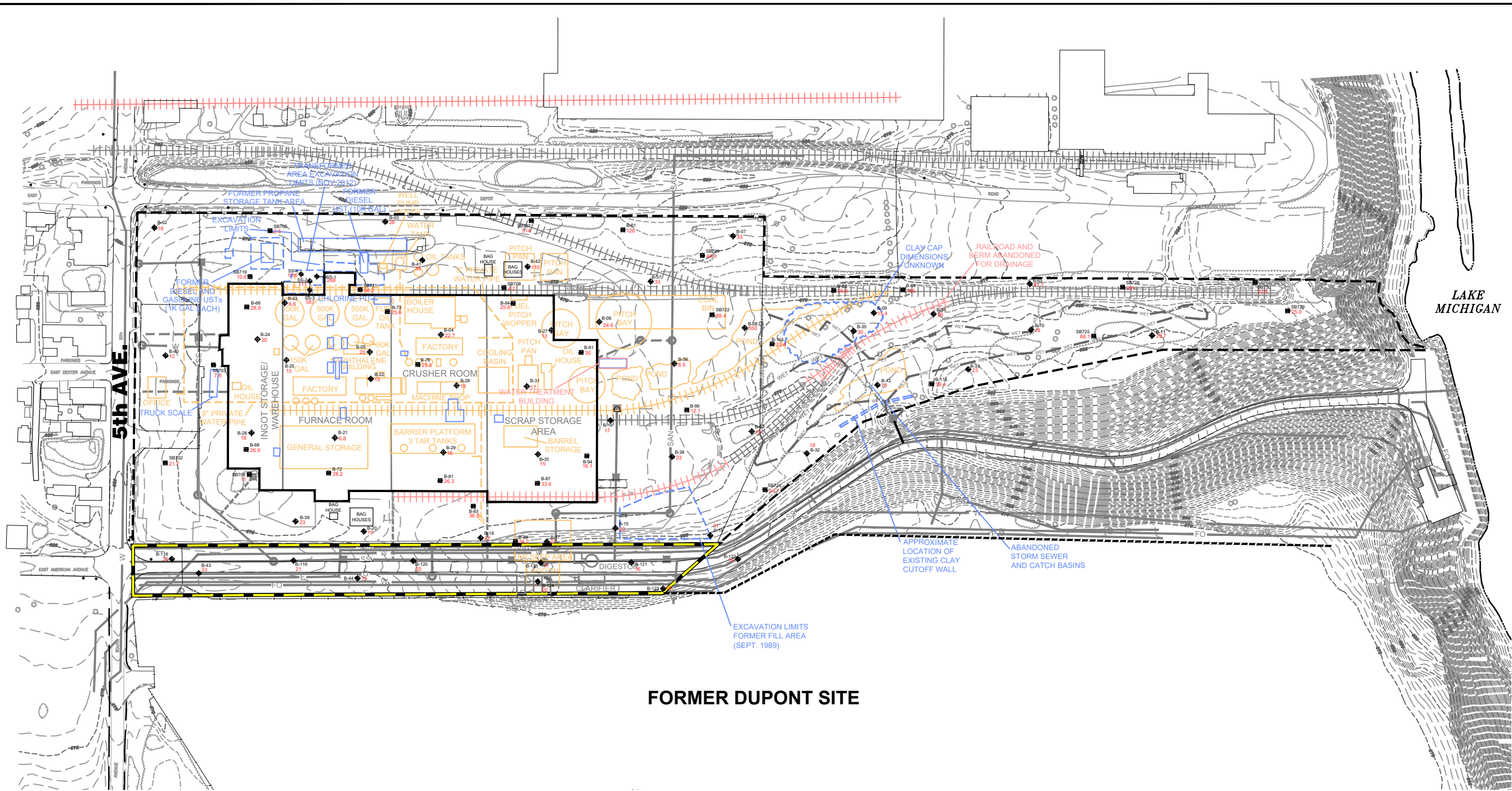
<b>Copies:</b>	<b>Description</b>
3	Revised hard copies of Figure C4 and Figure C8
3 CDs	Electronic version of the Complete Updated Report (report date 1/13/14, CD update 1/27/14)

**Message:**

Eric – Attached are 3 hard copies of the revised figures and 3 full report CDs for the Site Investigation Report (VPLE BRRTS Activity #06-41-560068). As I mentioned over the phone, we made edits to Figures C4 and C8 and are providing updated versions. You may recycle the current Figures C4 and C8 and the CDs provided with each report. If you have any questions, please let me know.

Thanks – Rick Guenther

Jan 23, 2014, 10:37am PLOTTED BY: rtkopkins. SAVED BY: rtkopkins  
 I:\ACADdata\Projects\2012095\6-1\FIG C4\_2095-61-BC4C-Chromium 0-4.dwg Layout1  
 XREFS: \2095-61-BASEMAP.dwg

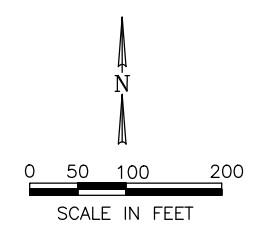


**FORMER DUPONT SITE**

	WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VPLE)		EXISTING MONITORING WELL/PIEZOMETER		ABANDONED STRUCTURE
	CITY PARCEL PROPERTY BOUNDARY (BEAZER VPLE)		SOIL BORING (2010 AND 2011)		FORMER TAR PLANT STRUCTURES
	UTILITY CORRIDOR PROPERTY BOUNDARY		SOIL BORING LOCATION (2012)		PAST REMEDIAL ACTIVITIES
	WETLAND BOUNDARY		SOIL BORING LOCATION (2013)		FORMER PITS OR TANKS, WABASH
	RAILROAD RAIL LINE		SURFACE SOIL LOCATION (2012)		FORMER WASTEWATER TREATMENT PLANT STRUCTURES
	SANITARY		SAMPLE LOCATION ABOVE THE NON-INDUSTRIAL DIRECT CONTACT RCL OF 100,000 mg/g		
	ABANDONED SANITARY		SAMPLE LOCATION ABOVE THE GROUNDWATER PATHWAY RCL OF 360,000 mg/g AND DIRECT CONTACT RCL		
	STORM SEWER		MAXIMUM CHROMIUM CONCENTRATION AT EACH LOCATION IN mg/g FOR THE DEFINED DEPTH INTERVAL		
	ASSUMED STORM SEWER				
	NATURAL GAS				
	WATER MAIN				
	ELECTRICAL				
	FIBER OPTIC				
	MANHOLE				
	INLET/CATCH BASIN				

**NOTES:**  
 1. CHROMIUM III WAS USED FOR DIRECT CONTACT AND THE TOTAL CHROMIUM WAS USED FOR GROUNDWATER PATHWAY.

**SOURCE NOTES:**  
 1. TETRA TECH FIGURE 14, EXTENT OF SOIL EXCEEDING INDUSTRIAL DIRECT CONTACT RCL, DATED 2/16/12, 4436D-REVISED-OAK CREEK.DWG.  
 2. TETRA TECH FIGURE 11, PROPOSED INVESTIGATION/SAMPLING LOCATIONS, DATED 11/20/12, FIGURE 11 - PROPOSED INVESTIGATION-SAMPLING LOCATIONS.DWG.  
 3. TETRA TECH FIGURE 1, SITE LAYOUT, DATED 06/07/13, SITE LAYOUT.DWG.  
 4. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013



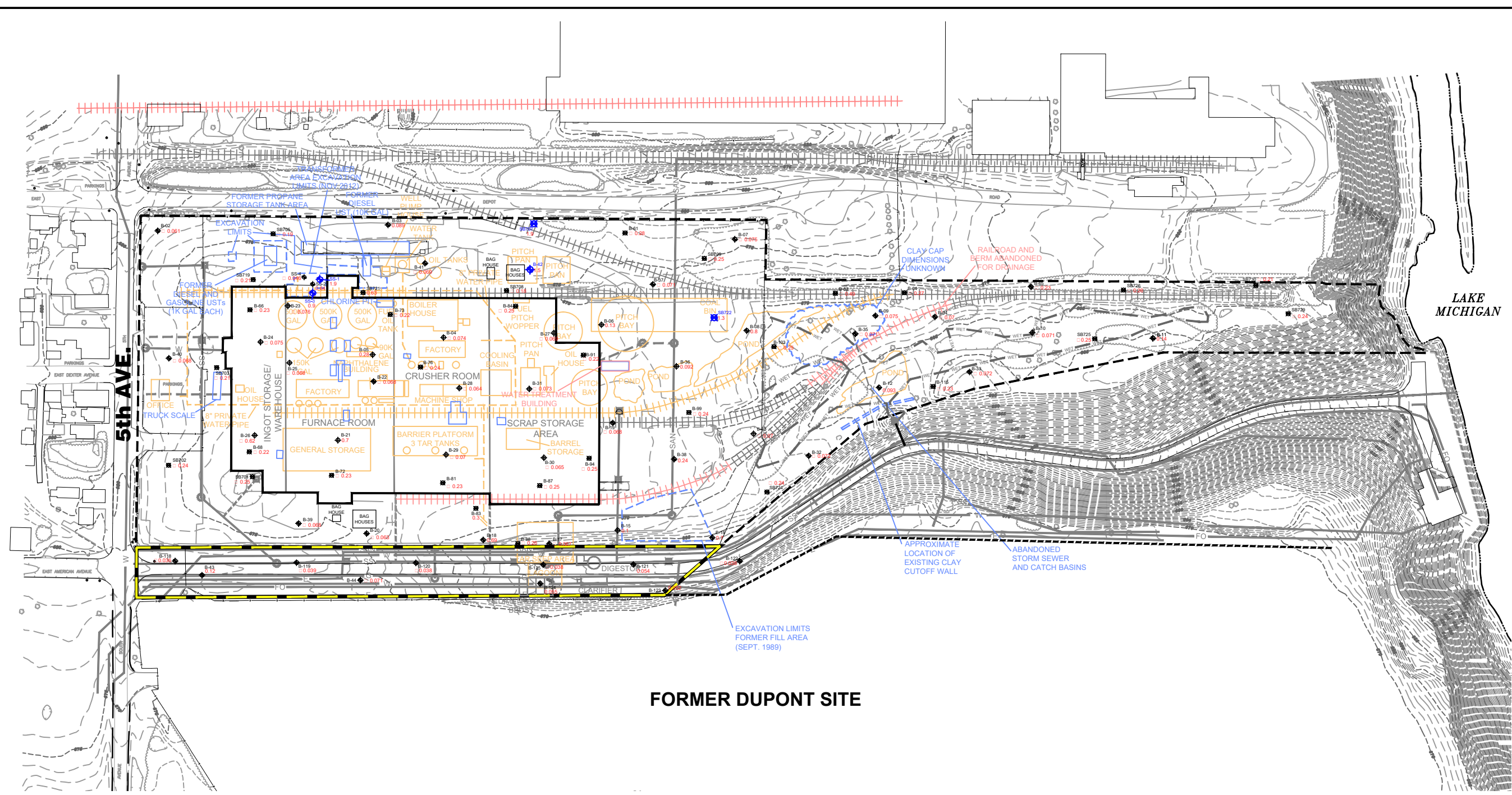
DRAWN BY: RLH/NWD	DATE: 01/10/14
CHECKED BY: RJG	DATE: 01/10/14
APPROVED BY: JAZ	DATE: 01/23/14
DRAWING NO: FIG C4_2095-61-BC4C-CHROMIUM 0-4	
REFERENCE: SEE INFO BLOCK	

**CHROMIUM SOIL CONCENTRATIONS**  
**0-4 FEET BGS**  
 SITE INVESTIGATION REPORT  
 FORMER WABASH ALLOYS  
 9100 SOUTH 5TH AVENUE  
 OAK CREEK, WISCONSIN



PROJECT NO.  
 2095/6.1  
 FIGURE NO.  
 C4

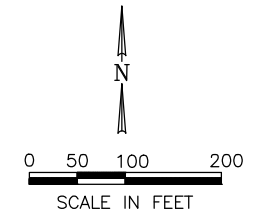
Jun 27, 2014 2:45pm PLOTTED BY: rhopkins\_SAVED BY: rhopkins  
 I:\ACADATA\Projects\2012095\0-1\FIG CB\_2095-61-BC8C-Silver 0-4.dwg Layout1  
 XREFS: \2095-61-BASEMAP.dwg



**FORMER DUPONT SITE**

	WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VPLE)		EXISTING MONITORING WELL/PIEZOMETER		ABANDONED STRUCTURE
	CITY PARCEL PROPERTY BOUNDARY (BEAZER VPLE)		SOIL BORING (2010 AND 2011)		FORMER TAR PLANT STRUCTURES
	UTILITY CORRIDOR PROPERTY BOUNDARY		SOIL BORING LOCATION (2012)		PAST REMEDIAL ACTIVITIES
	WETLAND BOUNDARY		SOIL BORING LOCATION (2013)		FORMER PITS OR TANKS, WABASH
	RAILROAD RAIL LINE		SURFACE SOIL LOCATION (2012)		FORMER WASTEWATER TREATMENT PLANT STRUCTURES
	SANITARY		SAMPLE LOCATION ABOVE THE NON-INDUSTRIAL DIRECT CONTACT RCL OF 391 mg/g AND GROUNDWATER PATHWAY RCL		
	ABANDONED SANITARY		SAMPLE LOCATION ABOVE THE GROUNDWATER PATHWAY RCL OF 0.850 mg/g		
	STORM SEWER		MAXIMUM SILVER CONCENTRATION AT EACH LOCATION IN mg/g FOR THE DEFINED DEPTH INTERVAL		
	ASSUMED STORM SEWER				
	NATURAL GAS				
	WATER MAIN				
	ELECTRICAL				
	FIBER OPTIC				
	MANHOLE				
	INLET/CATCH BASIN				

**SOURCE NOTES:**  
 1. TETRA TECH FIGURE 14, EXTENT OF SOIL EXCEEDING INDUSTRIAL DIRECT CONTACT RCL, DATED 2/16/12, 4436D-REVISED-OAK CREEK.DWG.  
 2. TETRA TECH FIGURE 11, PROPOSED INVESTIGATION/SAMPLING LOCATIONS, DATED 11/20/12, FIGURE 11 - PROPOSED INVESTIGATION-SAMPLING LOCATIONS.DWG.  
 3. TETRA TECH FIGURE 1, SITE LAYOUT, DATED 06/07/13, SITE LAYOUT.DWG.  
 4. WETLAND BOUNDARY DELINEATED BY HEY & ASSOCIATES AND FIELD LOCATED BY NATURAL RESOURCE TECHNOLOGY, INC. JUNE 2013



**SILVER SOIL CONCENTRATIONS**  
**0-4 FEET BGS**  
 SITE INVESTIGATION REPORT  
 FORMER WABASH ALLOYS  
 9100 SOUTH 5TH AVENUE  
 OAK CREEK, WISCONSIN



PROJECT NO.  
 2095/6.1  
 FIGURE NO.  
 C8

DRAWN BY: RLH/NWD	DATE: 01/10/14
CHECKED BY: RJG	DATE: 01/10/14
APPROVED BY: JAZ	DATE: 01/27/14
DRAWING NO: FIG C8_2095-61-BC8C-SILVER 0-4	
REFERENCE: SEE INFO BLOCK	