

Amadi, Eric A - DNR

From: Julie A. Zimdars <jzimdars@naturalrt.com>
Sent: Tuesday, June 21, 2016 11:59 AM
To: Amadi, Eric A - DNR
Cc: Mike Kellogg; Mike Simmons; Norman, Michele R - DNR; Brunette, Margaret M - DNR; Betzold, Kristina A - DNR; Lambert, Jamie D - DNR
Subject: RE: Proposed Revised Stockpile Locations for Former Wabash Alloys; BRRTS #: 02-41-553761
Attachments: Stormwater Flow Wabash Alloys - ALT LOC PILE PILE AREAS print.pdf; Wabash Alloys - HARD MARKER SURFACES print.pdf; PCBs Residuals - Proposed Pile Locations.pdf; Tar Residuals - Proposed Pile Locations.pdf

Hi Eric – As you requested, please see the below responses in **RED** and additional maps. The approval from the WDNR on the imported soil quality and soil management are needed for the City permit approval. Please let me know if you need hard copies of the maps. Thanks, Julie

Julie A. Zimdars, PE

Principal Engineer

Natural Resource Technology, Inc.

414.837.3564 direct | 262.719.4507 cell

From: Amadi, Eric A - DNR [mailto:Eric.Amadi@wisconsin.gov]
Sent: Monday, June 20, 2016 3:11 PM
To: Julie A. Zimdars
Cc: Mike Kellogg (mkellogg@connell-lp.com); Mike Simmons (msimmons@oakcreekwi.org); Norman, Michele R - DNR; Brunette, Margaret M - DNR; Betzold, Kristina A - DNR; Lambert, Jamie D - DNR
Subject: FW: Proposed Revised Stockpile Locations for Former Wabash Alloys; BRRTS #: 02-41-553761

Hi Julie,

We have reviewed the revised soil stockpile location and request the following items:

1. Provide a large scale map showing stockpile location; highlight locations of piezometers/monitoring wells in the vicinity; residual tar and PCBs contaminated areas; other pertinent features; **See attached Stormwater Flow Map Pile Areas, Tar Residuals (multiple maps), PCB Residuals (multiple maps)**
2. Provide area/acreage for the stockpile and expected height of the pile; **See attached Stormwater Flow Map Pile Areas**
3. Confirm that the soil stockpile will be placed on competent asphalt; otherwise; provide applicable storage information; **See attached Hard Marker Surface figure. We believe that a hard marker surface will serve to separate and distinguish the imported clay soil from the below soil. We will import and compact 2" of traffic bond from a quarry in the former propane tank area to make the hard marker surface, otherwise it exists already. The soil below the hard marker layer is low impact soil, as shown on the attached maps.**
4. Provide an explanation of the "areas of infiltration" including conduction details and purpose; **See attached Stormwater Flow Map**
5. Further explain the protective measure for the wells. **See attached Stormwater Flow Map**

We look forward to receiving the requested information. Please let me know if you have questions. Thanks.

Eric

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Eric Amadi

Phone: (414) 263-8639

Eric.Amadi@wisconsin.gov

From: Julie A. Zimdars [<mailto:jzimdars@naturalrt.com>]

Sent: Friday, June 17, 2016 3:26 PM

To: Amadi, Eric A - DNR; Lambert, Jamie D - DNR; Betzold, Kristina A - DNR

Cc: Mike Kellogg (mkellogg@connell-lp.com); Mike Simmons (msimmons@oakcreekwi.org)

Subject: Proposed Revised Stockpile Locations for Former Wabash Alloys

Eric, Jamie and Kristina-

We received the following concerns when applying for erosion control and fill permits with the City of Oak Creek:

“The stockpile is proposed to be up close to the road, so there are concerns regarding aesthetics. The City has concerns about the visual impact of this stockpiled soil on the adjoining properties and drainage issues that may be created for adjacent properties as this location would have it blocking storm inlets. Given how long it has already taken to get this property remediated and given the fact that we have already had several amended orders to delay removal of the concrete the city has very legitimate concerns that this material will be stockpiled for an extended period of time and negatively impact neighboring properties. We prefer that the material be stockpiled as far east on the property to minimize the impact on adjoining properties.”

I have attached a newly proposed configuration for the stockpiled soil in an attempt to address these concerns, which was discussed verbally with Mike Simmons, the City Engineer, this morning and would likely be more agreeable to the City. Please let me know if you have questions or concerns on the newly proposed stockpile location(s).

Thanks, Julie

Julie A. Zimdars, PE

Principal Engineer

Natural Resource Technology, Inc

234 W. Florida Street, Fifth Floor

Milwaukee, Wisconsin 53204

414.837.3564 direct | 262.719.4507 cell

414.837.3607 main phone | 414.837.3608 fax

jzimdars@naturalrt.com | www.naturalrt.com

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Stormwater Legend

Existing and Proposed Flow Direction

Stormwater Flow Map

Distance: to Lake Michigan

1,571.24

Distance to wetland

361.63

Primary Stockpile Area 67,000 sqft (1.55 acres). Pile height max. 12 ft (pink shaded)

Use Erosion Eels on Hard Surface As Needed,

Secondary Stockpile Area 18,000 sqft (0.4 acres). Use area only if needed based on soil volume. Pile height max. 12 ft., Protect MW-802 with steel plate painted orange, Abandon well MW-802 if pile area is needed, MW-101 is not in pile area, but protect with steel plate painted orange

Protect Wells MW-102, P-103 with 2 Highway Concrete Barriers or equivalent

Protect Well MW-104 with existing 2 Bollards

Inlets to be protected

Stone tracking Pad (50 ft min), direct path for trucks to go over prior to exiting site

Inlet to be protected per Tech Spec 1060

Silt fence

Areas of Infiltration for NR 216 permit (ie capture stormwater runoff & possible sediment from piles) - Existing Low Grassy Areas where former RR track existed along north side of former building

Wetland located within Gray Dashed Line

LAKE MICHIGAN

FORMER DUPONT SITE

DRAWN BY:	RLH	DATE:	09/24/14
CHECKED BY:	RJG	DATE:	09/24/14
APPROVED BY:	JAZ	DATE:	11/11/14
DRAWING NO: FIG C1_2095-62-B08 Alt S-3			
REFERENCE:			

PROPOSED STOCKPILE LOCATIONS

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



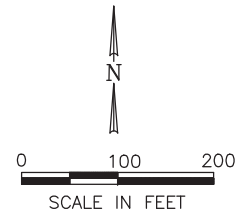
PROJECT NO.
2095/6.2

FIGURE NO.
2

--- WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VPLE)	● EXISTING MONITORING WELL/PIEZOMETER	○ FORMER TAR PLANT STRUCTURES
--- CITY PARCEL PROPERTY BOUNDARY (BEAZER VPLE)	□ PROPOSED LIMITS OF BARRIER FOR PCBs AND ARSENIC - 10" CLAY, 14" GENERAL FILL/ROOTING ZONE	□ PAST REMEDIAL ACTIVITIES
--- UTILITY CORRIDOR PROPERTY BOUNDARY	□ PROPOSED LIMITS OF BARRIER FOR ARSENIC ONLY - 24" GENERAL FILL/ROOTING ZONE	□ FORMER PITS OR TANKS, WABASH
--- WET WETLAND BOUNDARY		□ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
--- RAILROAD RAIL LINE		□ ABANDONED STRUCTURE
--- SAN SANITARY		
--- ABANDONED SANITARY		
--- SS STORM SEWER		
--- ASSUMED STORM SEWER		
--- G NATURAL GAS		
--- W WATER MAIN		
--- E ELECTRICAL		
--- FO FIBER OPTIC		
○ MANHOLE		
□ INLET/CATCH BASIN		

NOTES:
1. BARRIER LIMITS ARE APPROXIMATE AND MAY BE REVISED DURING REMEDIAL DESIGN.

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



Nov 12, 2014 7:28pm PLOTTED BY: ddada_SAVED BY: ddada
I:\ACADData\Projects\20\2095\6-2\Fig C1_2095-62-B08 AltS-3.dwg Layout1
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Stormwater Legend

Stormwater Flow Map

Existing and Proposed Flow Direction

Hard Marker layers:
Brown=Asphalt
Yellow= Concrete
Pink=Densely
Compacted Gravel
Base course

Primary Stockpile
Area 67,000 sqft

Use Erosion Eels
on Hard Surface
As Needed

Secondary Stockpile
Area 18,000 sqft,
only if needed based
on soil volume.

Contractor to fill and
compact with 2" thick
traffic bond in former
Propane tank area

Inlets to be
protected

Stone tracking Pad (50 ft
min), direct path for trucks
to go over prior to exiting
site

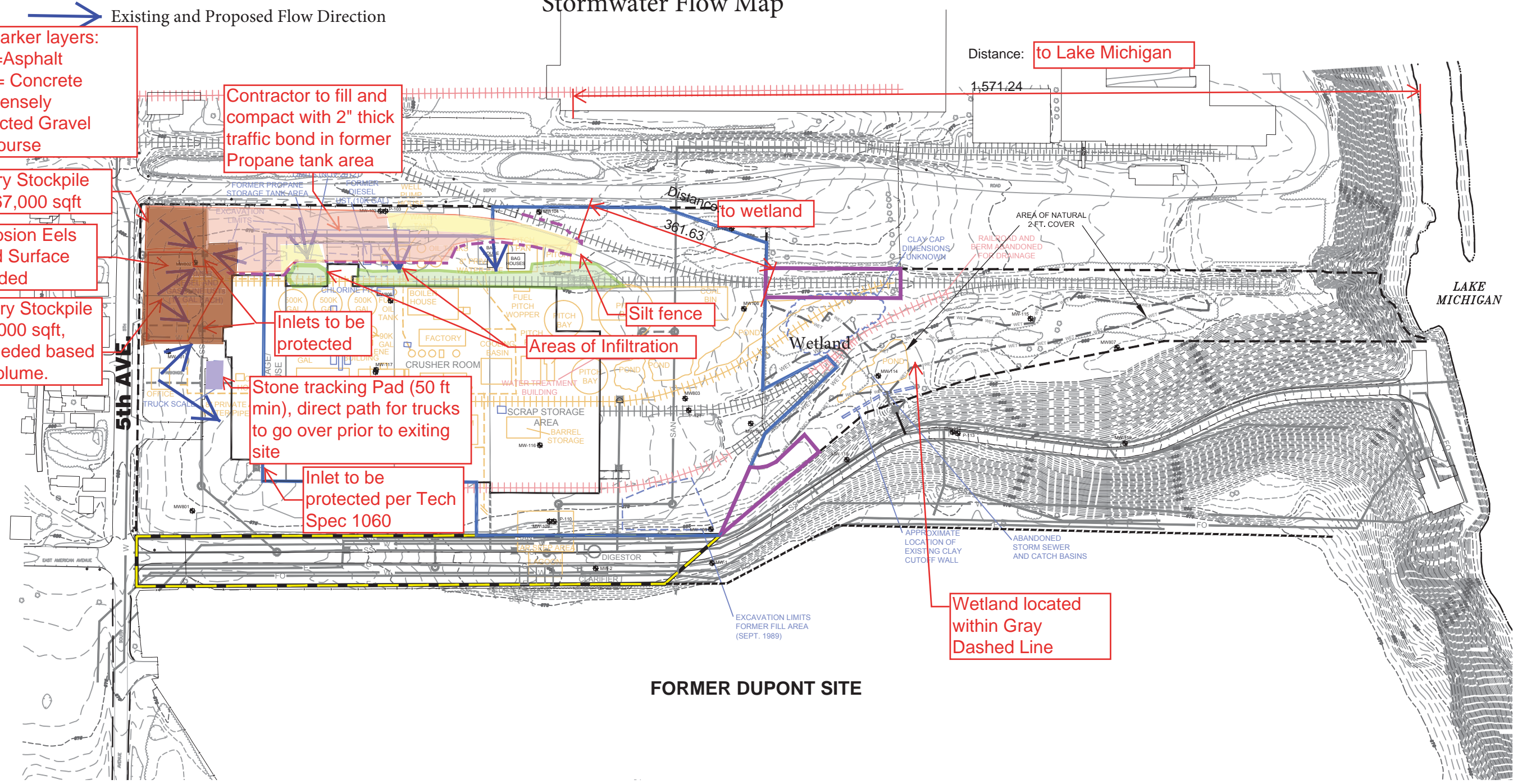
Inlet to be
protected per Tech
Spec 1060

Silt fence

Distance
361.63
to wetland

Distance: to Lake Michigan
1,571.24

Wetland located
within Gray
Dashed Line

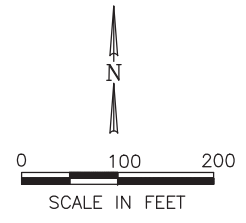


FORMER DUPONT SITE

--- WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VPLE)	● EXISTING MONITORING WELL/PIEZOMETER	○ FORMER TAR PLANT STRUCTURES
--- CITY PARCEL PROPERTY BOUNDARY (BEAZER VPLE)	□ PROPOSED LIMITS OF BARRIER FOR PCBs AND ARSENIC - 10" CLAY, 14" GENERAL FILL/ROOTING ZONE	□ PAST REMEDIAL ACTIVITIES
--- UTILITY CORRIDOR PROPERTY BOUNDARY	□ PROPOSED LIMITS OF BARRIER FOR ARSENIC ONLY - 24" GENERAL FILL/ROOTING ZONE	□ FORMER PITS OR TANKS, WABASH
--- WET WETLAND BOUNDARY		□ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
--- RAILROAD RAIL LINE		□ ABANDONED STRUCTURE
--- SAN SANITARY		
--- ABANDONED SANITARY		
--- SS STORM SEWER		
--- ASSUMED STORM SEWER		
--- G NATURAL GAS		
--- W WATER MAIN		
--- E ELECTRICAL		
--- FO FIBER OPTIC		
○ MANHOLE		
□ INLET/CATCH BASIN		

NOTES:
1. BARRIER LIMITS ARE APPROXIMATE AND MAY BE REVISED DURING REMEDIAL DESIGN.

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	DATE:	09/24/14
CHECKED BY:	RJG	DATE:	09/24/14
APPROVED BY:	JAZ	DATE:	11/11/14
DRAWING NO: FIG C1_2095-62-B08 Alt S-3			
REFERENCE: .			

PROPOSED STOCKPILE LOCATIONS

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

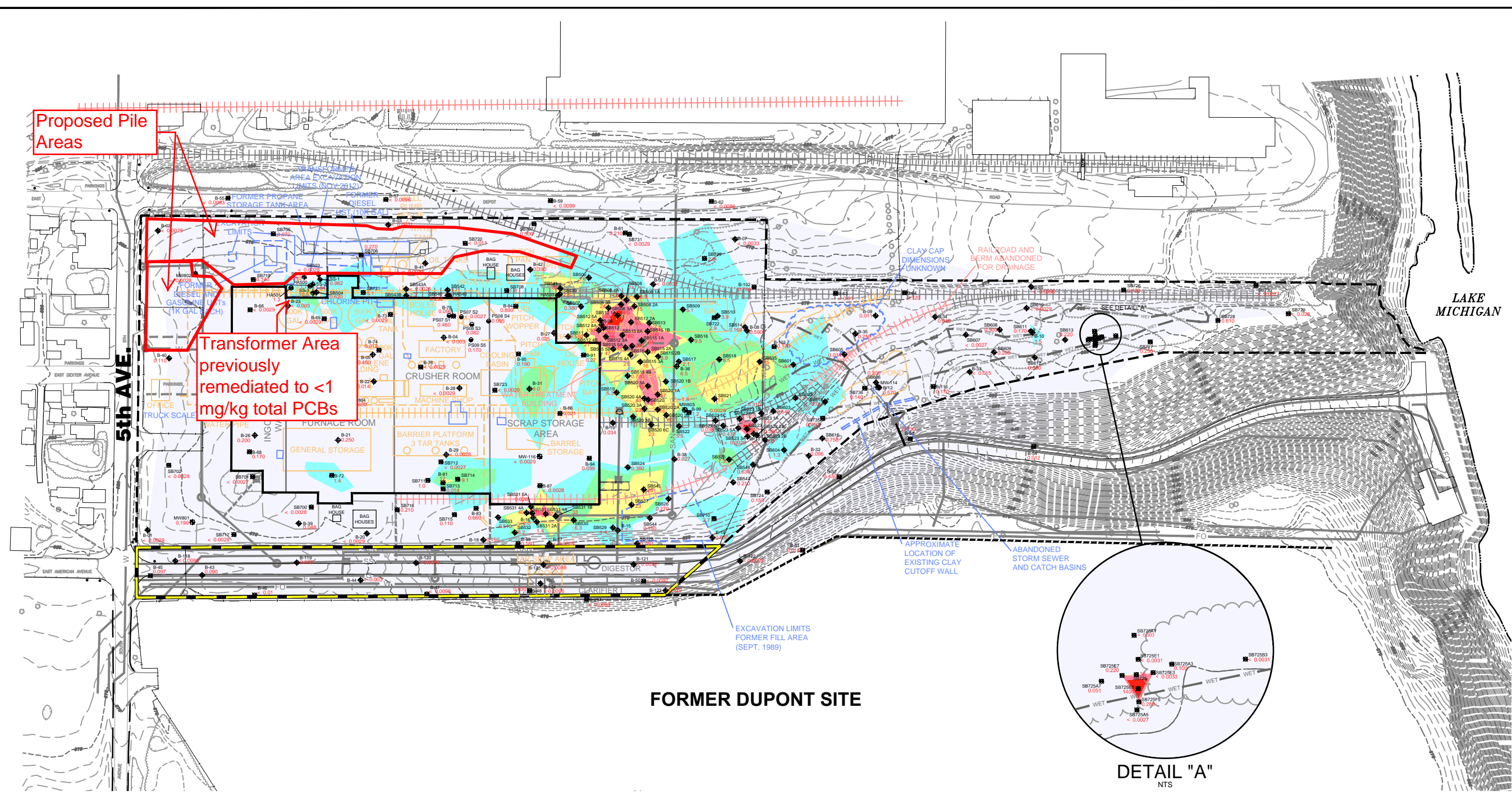


PROJECT NO.
2095/6.2

FIGURE NO.
2

Nov 12, 2014 7:28pm PLOTTED BY: ddada_SAVED BY: ddada
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Jun 13, 2014, 3:06pm, PLOTTED BY: rhopkins, SAVED BY: rhopkins
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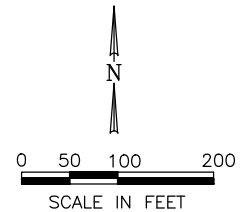


	WABASH PROPERTY BOUNDARY (CONNELL AND BEAZER VPLE)		EXISTING MONITORING WELL/PIEZOMETER		ABANDONED STRUCTURE
	CITY PARCEL PROPERTY BOUNDARY (BEAZER VPLE)		SOIL BORING LOCATION (2010 AND 2011)		FORMER TAR PLANT STRUCTURES
	UTILITY CORRIDOR PROPERTY BOUNDARY		SOIL BORING LOCATION (2012)		PAST REMEDIAL ACTIVITIES
	WETLAND BOUNDARY		SOIL BORING LOCATION (2013)		FORMER PITS OR TANKS, WABASH
	RAILROAD RAIL LINE		HAND AUGER LOCATION (2012)		FORMER WASTEWATER TREATMENT PLANT STRUCTURES
	SANITARY		SURFACE SOIL LOCATION (2012)		
	ABANDONED SANITARY		EXCAVATION BASE SAMPLE (2013)		
	STORM SEWER		MAXIMUM TOTAL PCB CONCENTRATION AT EACH LOCATION IN mg/kg FOR THE DEFINED DEPTH INTERVAL		
	ASSUMED STORM SEWER				
	NATURAL GAS				
	WATER MAIN				
	ELECTRICAL				
	FIBER OPTIC MANHOLE				
	INLET/CATCH BASIN				

MINIMUM CONCENTRATION	MAXIMUM CONCENTRATION	COLOR
0	1	White
1	5	Light Blue
5	10	Light Green
10	50	Yellow
50	500	Orange
500	1400	Red

NOTES:
 1. IF A CONCENTRATION WAS NON-DETECT, HALF THE DETECTION LIMIT WAS USED TO CALCULATE THE COLOR MAP.

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: 01/13/14
DRAWING NO: FIG C14_2095-61-BC14C-TOTAL PCB 0-4	
REFERENCE: SEE INFO BLOCK	

TOTAL PCB 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.
 C14

Proposed Pile Areas

Transformer Area previously remediated to <1 mg/kg total PCBs

FORMER DUPONT SITE

LAKE MICHIGAN

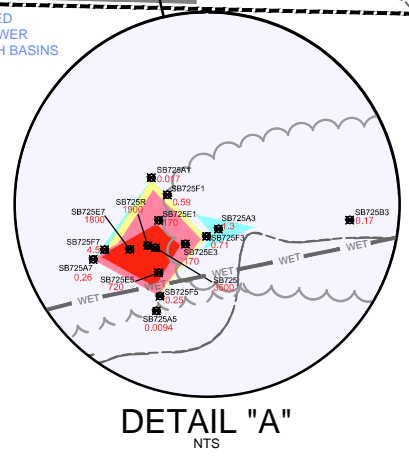
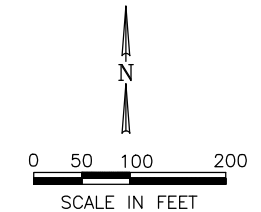
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 I:\ACADData\Projects\2012095\6-1\FIG C15_2095-61-BC15C-total PCB 4-8.dwg Layout1
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	WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VP/LE)		EXISTING MONITORING WELL/PIEZOMETER		ABANDONED STRUCTURE
	CITY PARCEL PROPERTY BOUNDARY (BEAZER VP/LE)		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		HAND AUGER LOCATION (2012)		FORMER WASTEWATER TREATMENT PLANT STRUCTURES
	SANITARY		SURFACE SOIL LOCATION (2012)		
	ABANDONED SANITARY		EXCAVATION BASE SAMPLE (2013)		
	STORM SEWER		MAXIMUM TOTAL PCB CONCENTRATION AT EACH LOCATION IN mg/kg FOR THE DEFINED DEPTH INTERVAL		
	ASSUMED STORM SEWER				
	NATURAL GAS				
	WATER MAIN				
	ELECTRICAL				
	FIBER OPTIC				
	MANHOLE				
	INLET/CATCH BASIN				

MINIMUM CONCENTRATION	MAXIMUM CONCENTRATION	COLOR
0	1	White
1	5	Light Blue
5	10	Light Green
10	50	Yellow
50	500	Orange
500	3500	Red

- NOTES:
- IF A CONCENTRATION WAS NON-DETECT, HALF THE DETECTION LIMIT WAS USED TO CALCULATE THE COLOR MAP.

- SOURCE NOTES:
- TETRA TECH FIGURE 14, EXTENT OF SOIL EXCEEDING INDUSTRIAL DIRECT CONTACT RCL, DATED 2/16/12, 4436D-REVISED-OAK CREEK.DWG.
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 - TETRA TECH FIGURE 1, SITE LAYOUT, DATED 06/07/13, SITE LAYOUT.DWG.
 - 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: 01/13/14
DRAWING NO: FIG C15_2095-61-BC15C-TOTAL PCB 4-8	
REFERENCE: SEE INFO BLOCK	

TOTAL PCB SOIL CONCENTRATIONS
4-8 FEET BGS
 SITE INVESTIGATION REPORT
 FORMER WABASH ALLOYS
 9100 SOUTH 5TH AVENUE
 OAK CREEK, WISCONSIN



PROJECT NO.
2095/6.1

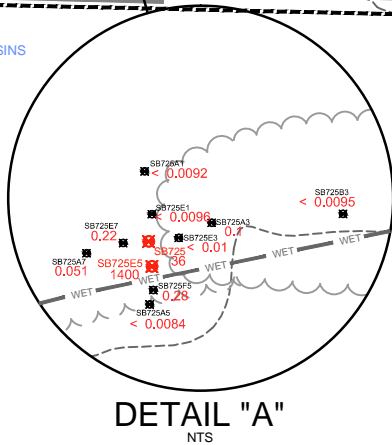
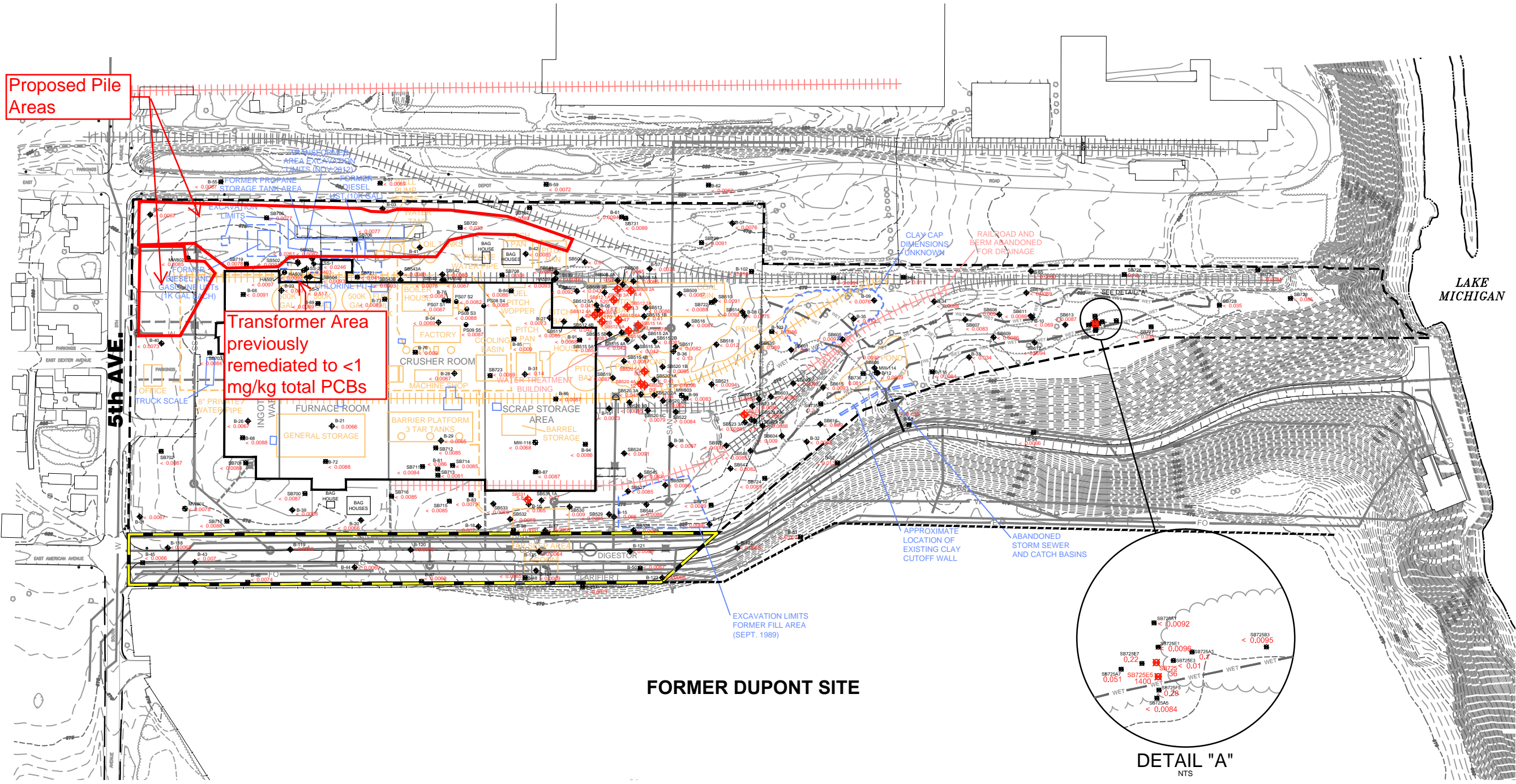
FIGURE NO.
C15

Jun 13, 2014, 4:27pm, PLOTTED BY: rhopkins, SAVED BY: rhopkins
 I:\ACADATA\Projects\20\2095\6-1\FIG C33_2095-61-BC33C-PCB Direct Contact 0-4.dwg Layout1
 XREFS: \2095-61-BASEMAP.dwg

Proposed Pile Areas

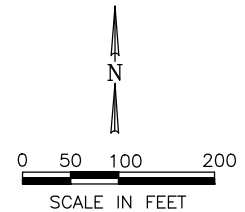
Transformer Area previously remediated to <1 mg/kg total PCBs

FORMER DUPONT SITE



--- WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VPLE)	◆ B-01 EXISTING MONITORING WELL/PIEZOMETER	□ ABANDONED STRUCTURE
--- CITY PARCEL PROPERTY BOUNDARY (BEAZER BPLE)	◆ SB508 SOIL BORING LOCATION (2012)	□ FORMER TAR PLANT STRUCTURES
--- UTILITY CORRIDOR PROPERTY BOUNDARY	◆ SB700 SOIL BORING LOCATION (2013)	□ PAST REMEDIAL ACTIVITIES
--- WET WETLAND BOUNDARY	◆ H4539 HAND AUGER LOCATION (2012)	□ FORMER PITS OR TANKS, WABASH
--- RAILROAD RAIL LINE	◆ SS-4 SURFACE SOIL LOCATION (2012)	□ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
--- SAN SANITARY	◆ LADLE PIT 1 EXCAVATION BASE SAMPLE (2013)	
--- ABANDONED SANITARY	◆ 0.18 SAMPLE LOCATION ABOVE THE NON-INDUSTRIAL DIRECT CONTACT RCL OF 3.93 mg/kg OR ABOVE THE INDUSTRIAL DIRECT CONTACT RCL OF 21.2 mg/kg FOR THE UTILITY CORRIDOR	
--- SS STORM SEWER		
--- ASSUMED STORM SEWER		
--- G NATURAL GAS		
--- W WATER MAIN		
--- E ELECTRICAL		
--- FO FIBER OPTIC		
○ MANHOLE		
■ INLET/CATCH BASIN		

- SOURCE NOTES:
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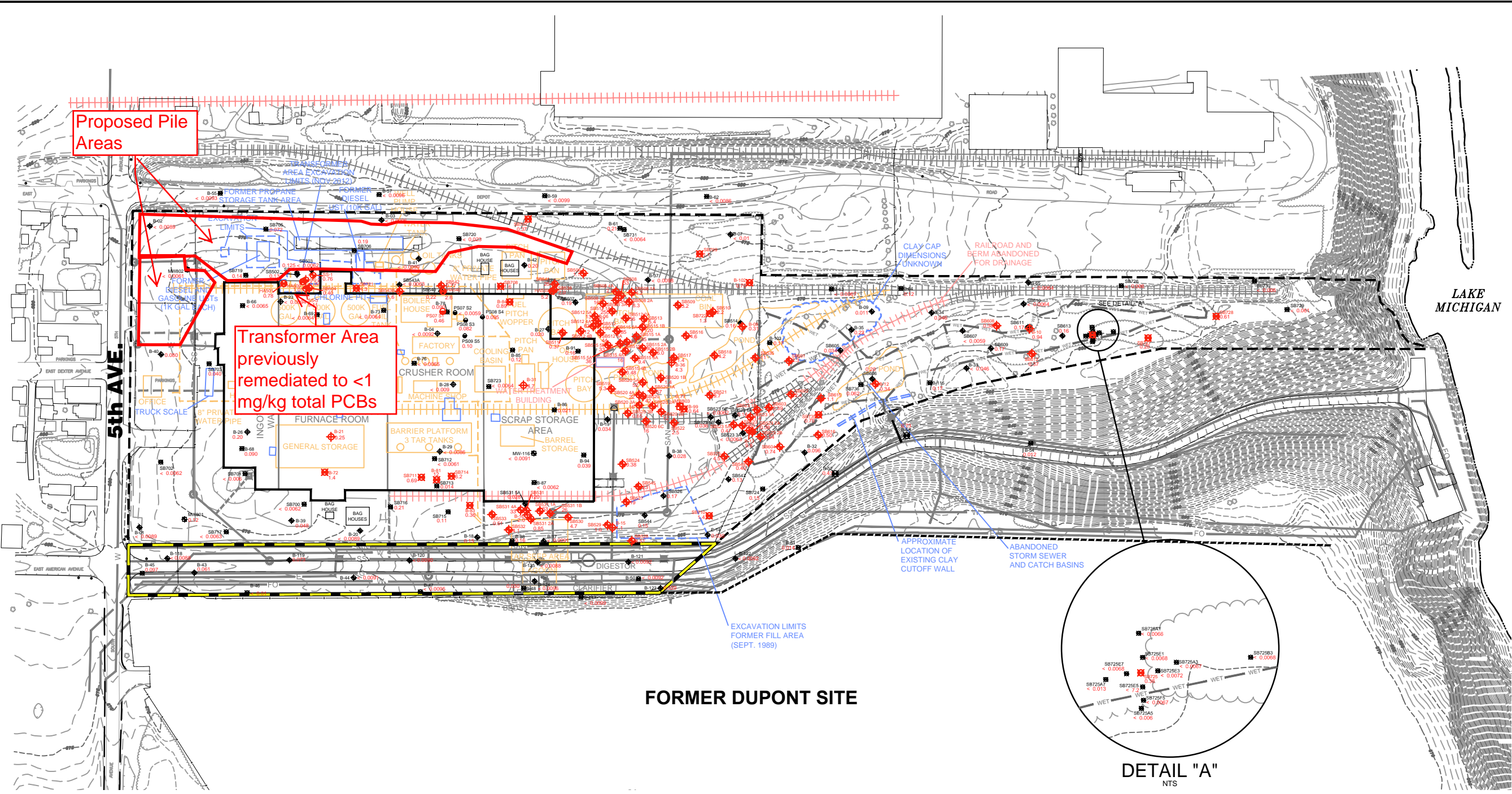
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APPROVED BY: JAZ	DATE: 01/13/14
DRAWING NO: FIG C33_2095-61-BC33C-PCB DIRECT CONTACT 0-4	
REFERENCE: SEE INFO BLOCK	

PCB AROCHLOR 1016 SOIL - DIRECT CONTACT COMPARISON 0-4 FEET BGS
 SITE INVESTIGATION REPORT
 FORMER WABASH ALLOYS
 9100 SOUTH 5TH AVENUE
 OAK CREEK, WISCONSIN



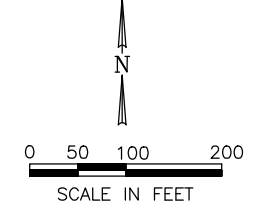
PROJECT NO. 2095/6.1
FIGURE NO. C33

Jun 13, 2014, 4:30pm, PLOTTED BY: rhopkins, SAVED BY: rhopkins
 I:\ACADdata\Projects\2012\2095\6-1\FIG C35_2095-61-BC35C-PCB Direct Contact 0-4.dwg Layout1
 XREFS: \2095-61-BASEMAP.dwg



	WABASH PARCEL PROPERTY BOUNDARY (CONNELL AND BEAZER VP/LE)		EXISTING MONITORING WELL/PIEZOMETER		ABANDONED STRUCTURE
	CITY PARCEL PROPERTY BOUNDARY (BEAZER VP/LE)		SOIL BORING (2010 AND 2011)		FORMER TAR PLANT STRUCTURES
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	SANITARY		SURFACE SOIL LOCATION (2012)		
	ABANDONED SANITARY		EXCAVATION BASE SAMPLE (2013)		
	STORM SEWER		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		
	NATURAL GAS		MAXIMUM PCB AROCHLOR 1242/1248/1254/1260 CONCENTRATION AT EACH LOCATION IN mg/kg FOR THE DEFINED DEPTH INTERVAL		
	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.
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 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



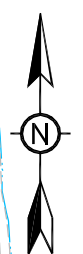
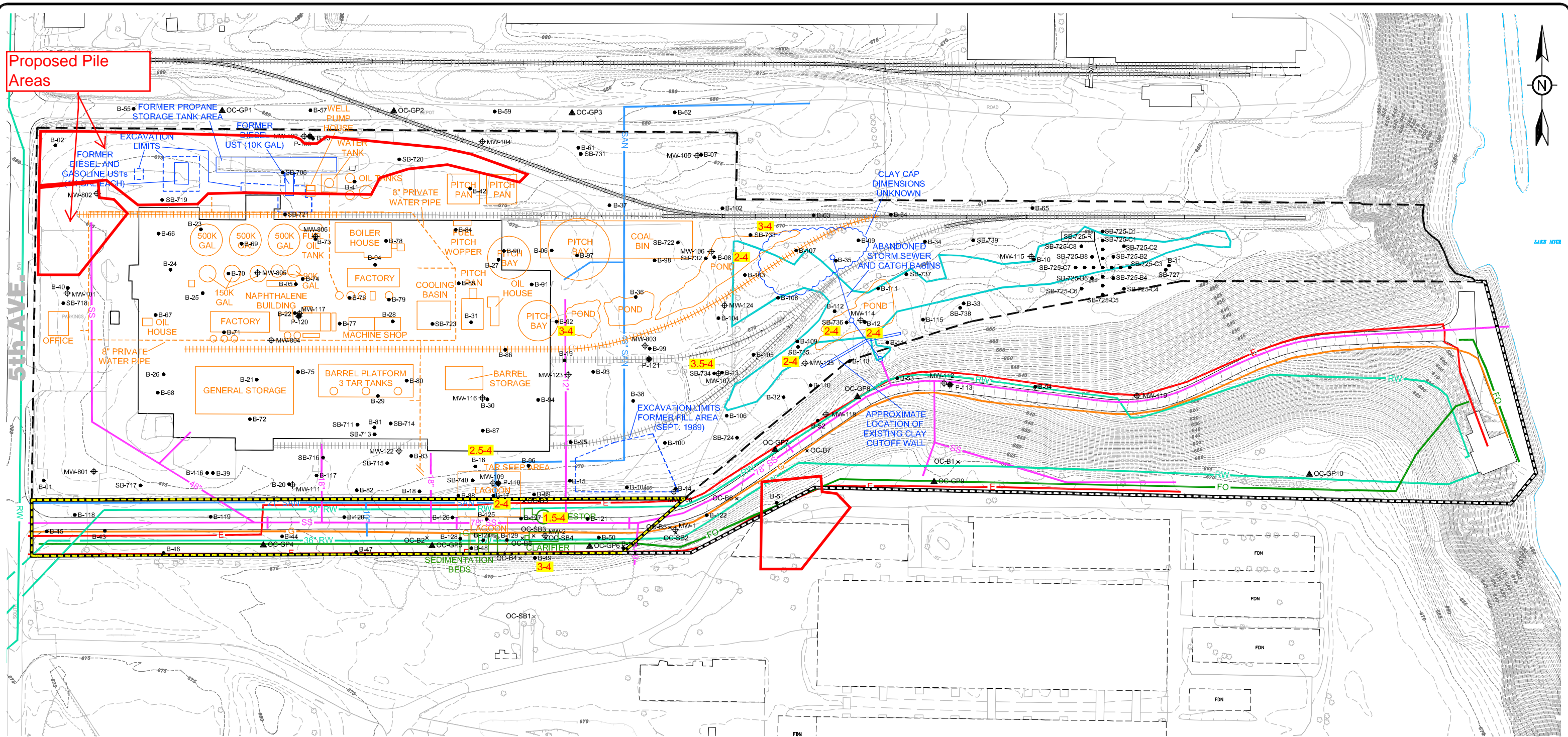
DRAWN BY: RLH/NWD	DATE: 01/11/14
CHECKED BY: RJG	DATE: 01/11/14
APPROVED BY: JAZ	DATE: 01/13/14
DRAWING NO: FIG C35_2095-61-BC35C-PCB DIRECT CONTACT 0-4	
REFERENCE: SEE INFO BLOCK	

PCB AROCHLOR 1242/1248/1254/1260 SOIL - DIRECT CONTACT COMPARISON 0-4 FEET BGS
 SITE INVESTIGATION REPORT
 FORMER WABASH ALLOYS
 9100 SOUTH 5TH AVENUE
 OAK CREEK, WISCONSIN



PROJECT NO. 2095/6.1
FIGURE NO. C35

Proposed Pile Areas



EXPLANATION

- ⊕ MW-101 WATER TABLE WELL
- P-103 NESTED PIEZOMETER
- ⊙ B-01 SOIL BORING
- × OC-SB1 SOIL BORING (CITY OF OAK CREEK)
- ▲ OC-GP1 GEOPROBE (CITY OF OAK CREEK)
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- - - APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)

- ○ FORMER TAR PLANT STRUCTURES
- ○ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY
- 2-4 OBSERVED TAR (0-4' BGS)

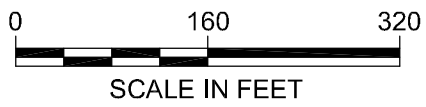
- E ELECTRICAL
- G NATURAL GAS
- RW RAW WATER
- SAN SANITARY
- SS STORM SEWER
- FO FIBER OPTIC

- REFERENCE NOTES:**
- EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
 - FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
 - FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
 - FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.

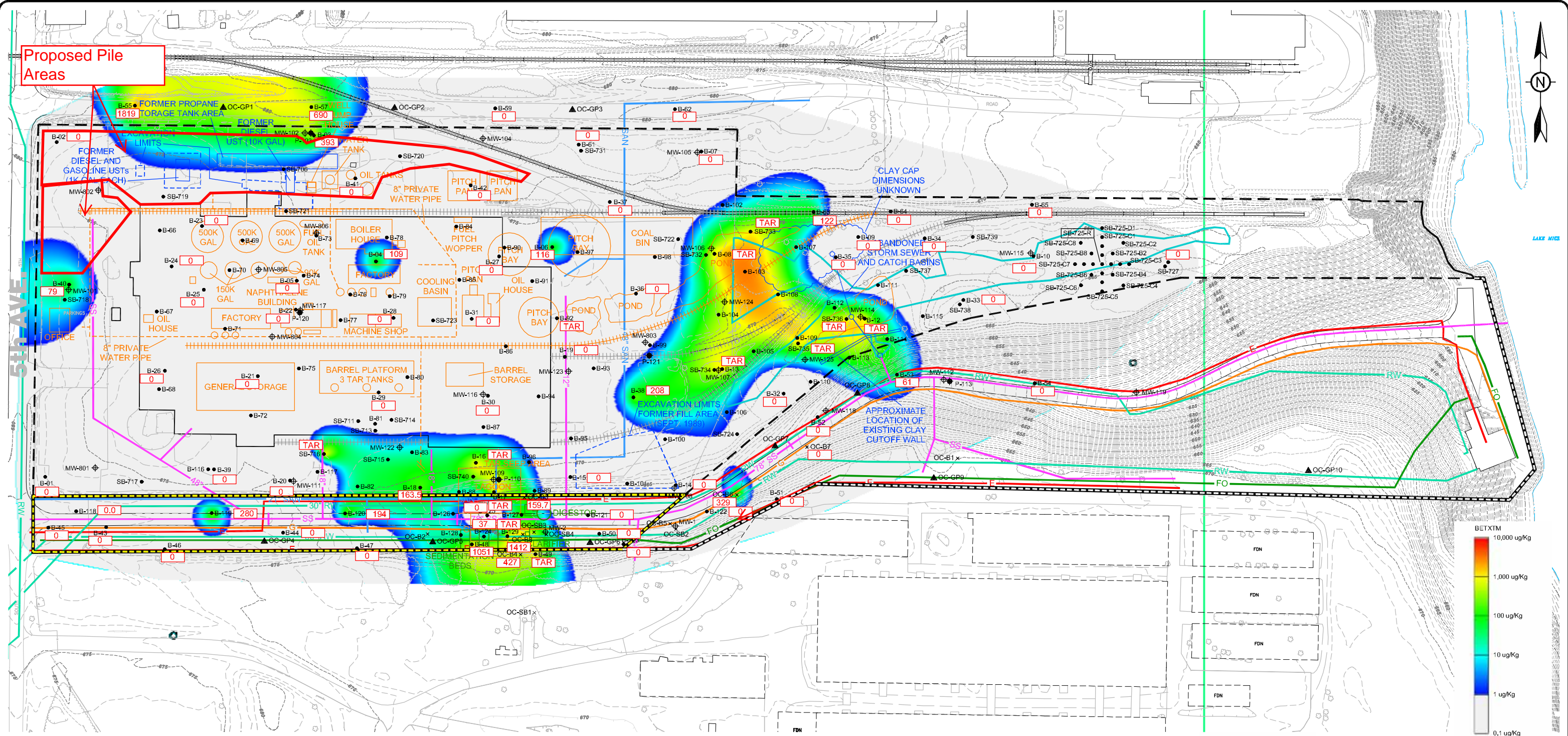
TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE
OBSERVED TAR - 0-4 FEET BGS

LOCATION: OAK CREEK, WISCONSIN

	CHECKED	MRN	FIGURE: B31
	DRAFTED	HJW	
	PROJECT	117-2201323	
	DATE	1/9/14	



Proposed Pile Areas



EXPLANATION

- ⊕ MW-101 WATER TABLE WELL
- P-103 NESTED PIEZOMETER
- ⊙ B-01 SOIL BORING
- × OC-SB1 SOIL BORING (CITY OF OAK CREEK)
- ▲ OC-GP1 GEOPROBE (CITY OF OAK CREEK)
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- - - APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)

- ○ FORMER TAR PLANT STRUCTURES
- □ PAST REMEDIAL ACTIVITIES
- ○ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY

- 393 TOTAL BTEXTM CONCENTRATION (ug/Kg) AT 0-4' BELOW GROUND SURFACE
- TAR TAR OBSERVED IN CLAY FRACTURES OR MATRIX
- E ELECTRICAL
- G NATURAL GAS
- RW RAW WATER
- SAN SANITARY
- SS STORM SEWER
- FO FIBER OPTIC

REFERENCE NOTES:

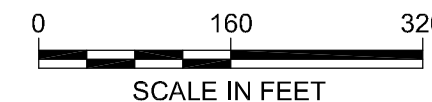
1. EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
2. FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
3. FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
4. FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.

TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE
 TOTAL BTEXTM SOIL CONCENTRATIONS - 0-4 FEET BGS

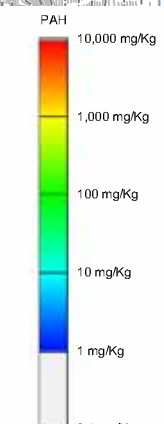
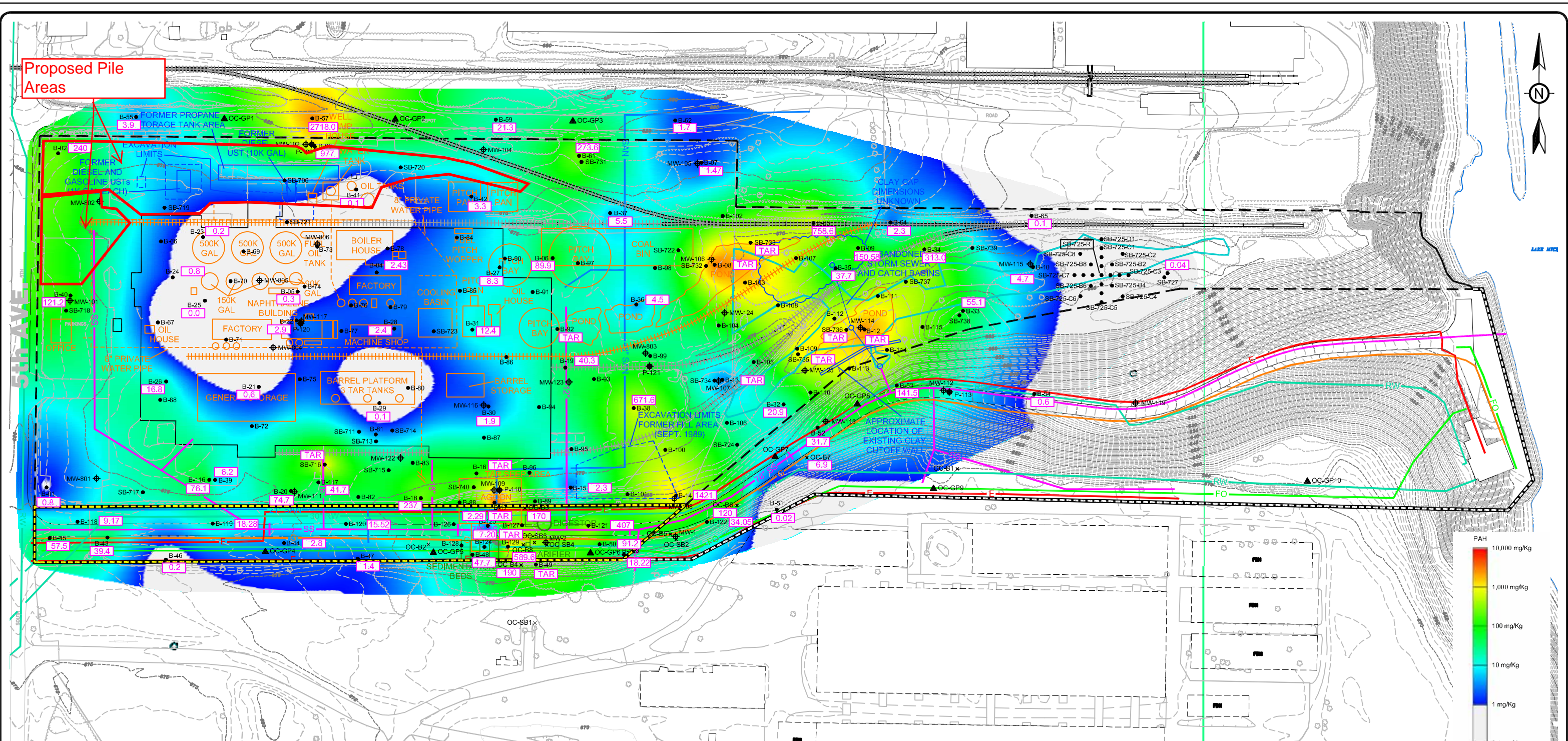
LOCATION: OAK CREEK, WISCONSIN



CHECKED	MRN	FIGURE: B1
DRAFTED	HJW	
PROJECT	117-2201323	
DATE	1/9/14	



Proposed Pile Areas



EXPLANATION

- ⊕ MW-101 WATER TABLE WELL
- P-103 NESTED PIEZOMETER
- B-01 SOIL BORING
- × OC-SB1 SOIL BORING (CITY OF OAK CREEK)
- ▲ OC-GP1 GEOPROBE (CITY OF OAK CREEK)
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- - - APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)
- ○ FORMER TAR PLANT STRUCTURES
- ○ PAST REMEDIAL ACTIVITIES
- ○ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY
- 120.3 TOTAL PAH CONCENTRATION (mg/Kg) AT 0-4' BELOW GROUND SURFACE
- TAR TAR OBSERVED IN CLAY FRACTURES OR MATRIX
- E ELECTRICAL
- G NATURAL GAS
- RW RAW WATER
- SAN SANITARY
- SS STORM SEWER
- FO FIBER OPTIC

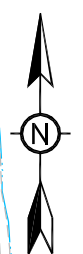
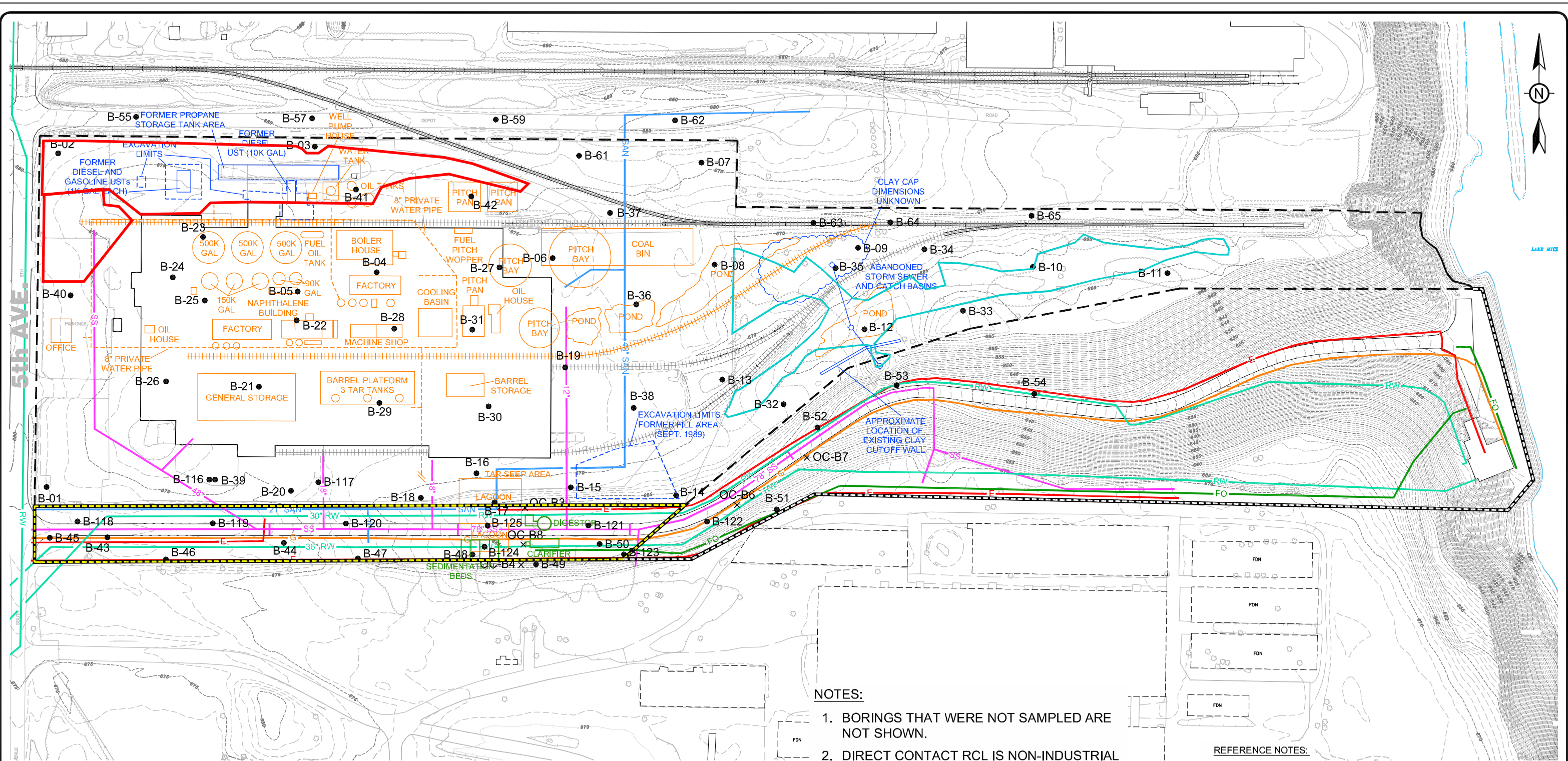
- REFERENCE NOTES:**
1. EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
 2. FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
 3. FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
 4. FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.

TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE
 TOTAL PAH SOIL CONCENTRATIONS - 0-4 FEET BGS

LOCATION: OAK CREEK, WISCONSIN

	CHECKED	MRN	FIGURE: B10
	DRAFTED	HJW	
	PROJECT	117-2201323	
	DATE	1/9/14	





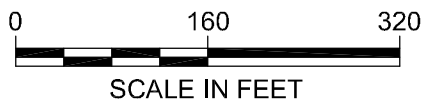
EXPLANATION

- B-03 SAMPLE LOCATION WITH BENZENE (ug/Kg) THAT EXCEEDS SOIL - DIRECT CONTACT RCL
- B-01 SAMPLE LOCATION WITH BENZENE (ug/Kg) THAT DOES NOT EXCEED SOIL - DIRECT CONTACT RCL
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)

- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY

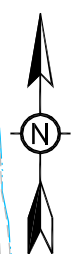
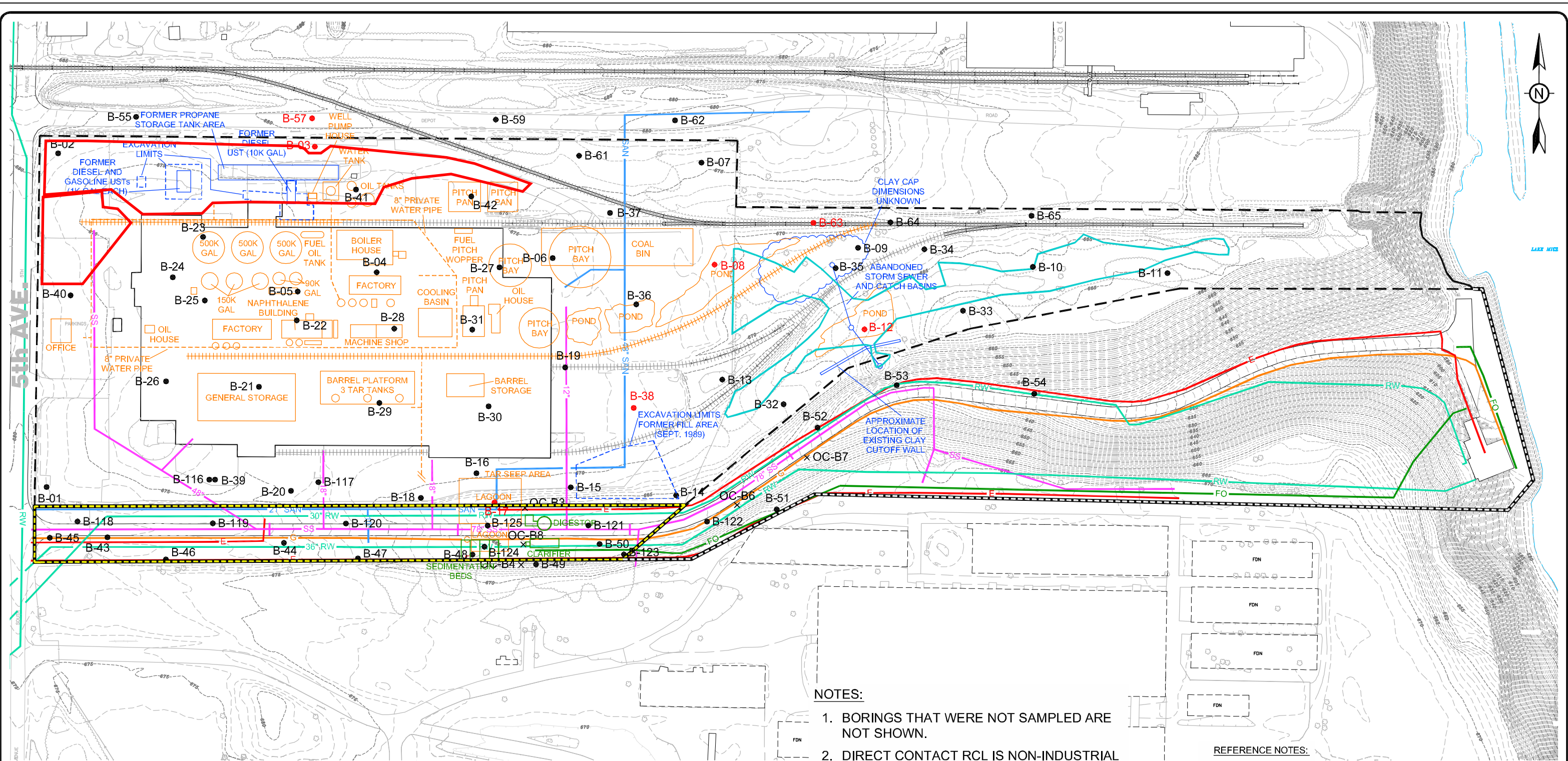
- NOTES:**
1. BORINGS THAT WERE NOT SAMPLED ARE NOT SHOWN.
 2. DIRECT CONTACT RCL IS NON-INDUSTRIAL FOR WABASH PARCEL AND INDUSTRIAL FOR CITY UTILITY CORRIDOR.

- E ELECTRICAL
- G NATURAL GAS
- RW RAW WATER
- SAN SANITARY
- SS STORM SEWER
- FO FIBER OPTIC



- REFERENCE NOTES:**
1. EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
 2. FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
 3. FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
 4. FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.

TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE BENZENE SOIL - DIRECT CONTACT COMPARISON - 0-4 FEET BGS		
LOCATION: OAK CREEK, WISCONSIN		
	CHECKED	MRN
	DRAFTED	HJW
	PROJECT	117-2201323
	DATE	1/9/14
		FIGURE: B21



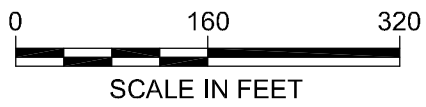
EXPLANATION

- B-03 SAMPLE LOCATION WITH NAPHTHALENE (mg/Kg) THAT EXCEEDS SOIL - DIRECT CONTACT RCL
- B-01 SAMPLE LOCATION WITH NAPHTHALENE (mg/Kg) THAT DOES NOT EXCEED SOIL - DIRECT CONTACT RCL
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)

- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY

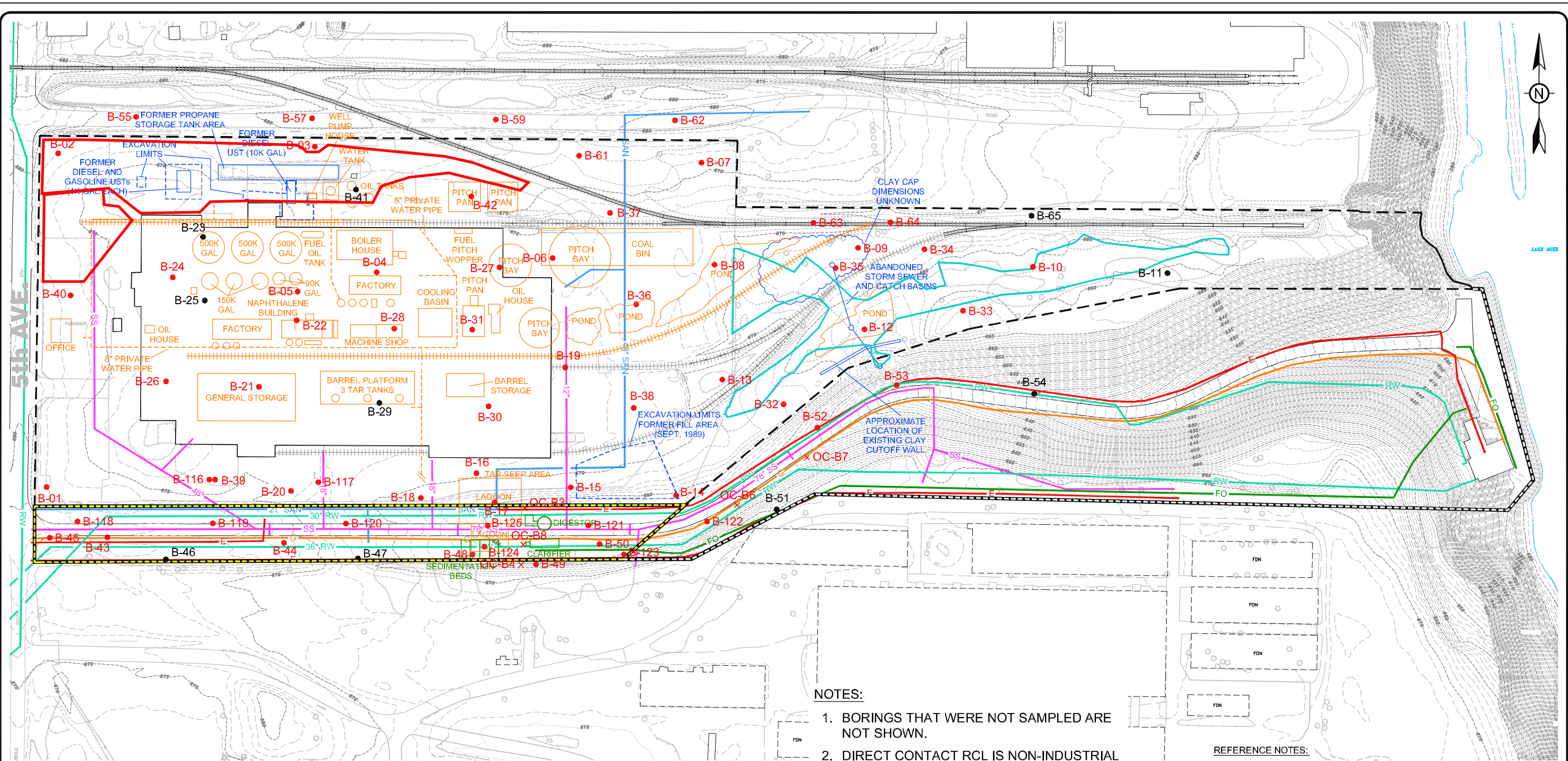
- NOTES:**
1. BORINGS THAT WERE NOT SAMPLED ARE NOT SHOWN.
 2. DIRECT CONTACT RCL IS NON-INDUSTRIAL FOR WABASH PARCEL AND INDUSTRIAL FOR CITY UTILITY CORRIDOR.

- E ELECTRICAL
- G NATURAL GAS
- RW RAW WATER
- SAN SANITARY
- SS STORM SEWER
- FO FIBER OPTIC



- REFERENCE NOTES:**
1. EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
 2. FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
 3. FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
 4. FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.

TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE NAPHTHALENE SOIL - DIRECT CONTACT COMPARISON - 0-4 FEET BGS		
LOCATION: OAK CREEK, WISCONSIN		
	CHECKED	MRN
	DRAFTED	HJW
	PROJECT	117-2201323
	DATE	1/9/14
		FIGURE: B23



EXPLANATION

- B-01 SAMPLE LOCATION WITH BENZO(a)PYRENE (mg/Kg) THAT EXCEEDS SOIL - DIRECT CONTACT RCL
- B-11 SAMPLE LOCATION WITH BENZO(a)PYRENE (mg/Kg) THAT DOES NOT EXCEED SOIL - DIRECT CONTACT RCL
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)

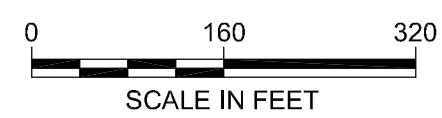
- FORMER TAR PLANT STRUCTURES
- PAST REMEDIAL ACTIVITIES
- FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY

NOTES:

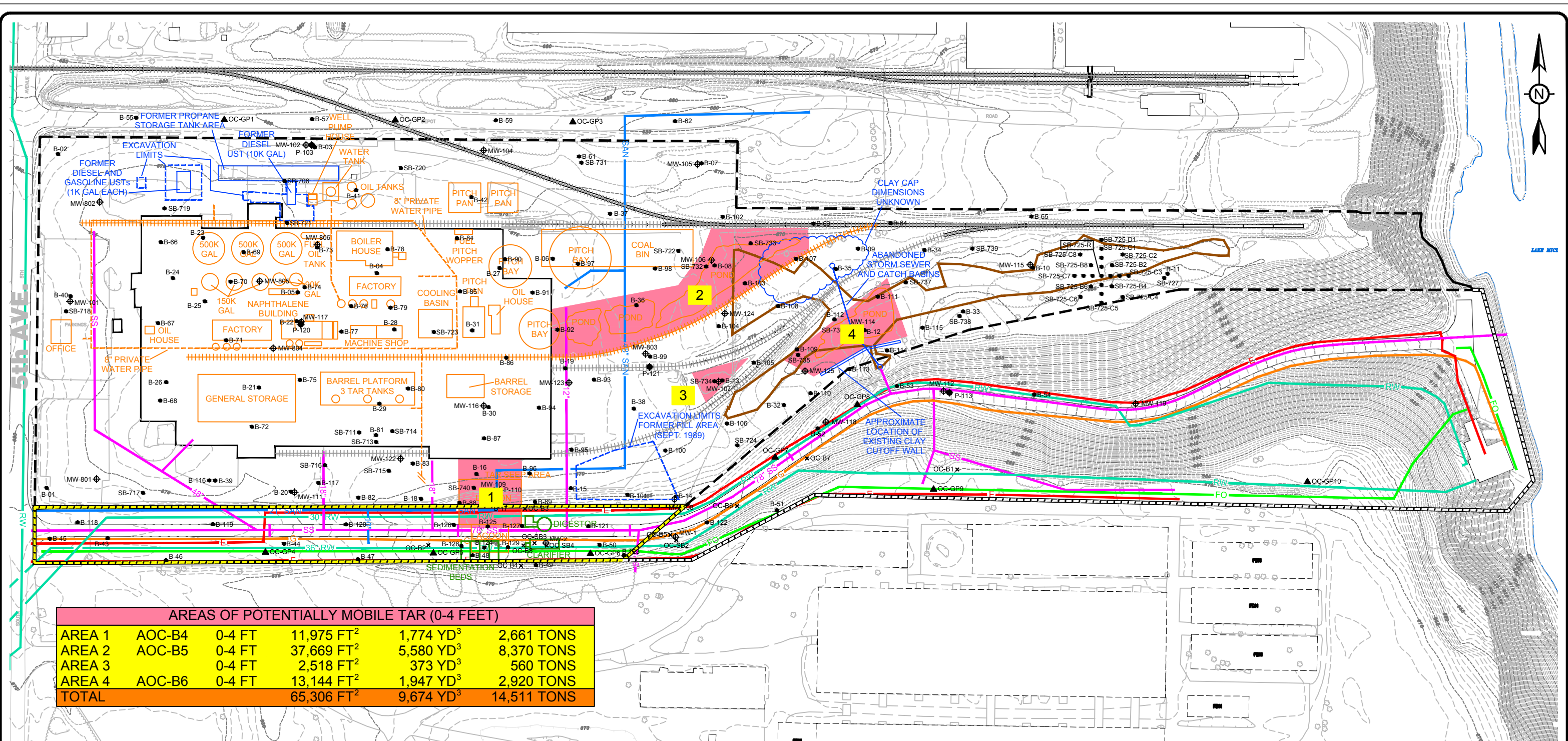
1. BORINGS THAT WERE NOT SAMPLED ARE NOT SHOWN.
2. DIRECT CONTACT RCL IS NON-INDUSTRIAL FOR WABASH PARCEL AND INDUSTRIAL FOR CITY UTILITY CORRIDOR.

REFERENCE NOTES:

1. EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
2. FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
3. FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
4. FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.



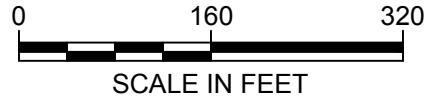
TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE			
B(a)P SOIL - DIRECT CONTACT COMPARISON - 0-4 FEET BGS			
LOCATION: OAK CREEK, WISCONSIN			
	CHECKED	MRN	FIGURE: B19
	DRAFTED	HJW	
	PROJECT	117-2201323	
	DATE	1/9/14	



AREAS OF POTENTIALLY MOBILE TAR (0-4 FEET)					
AREA 1	AOC-B4	0-4 FT	11,975 FT ²	1,774 YD ³	2,661 TONS
AREA 2	AOC-B5	0-4 FT	37,669 FT ²	5,580 YD ³	8,370 TONS
AREA 3		0-4 FT	2,518 FT ²	373 YD ³	560 TONS
AREA 4	AOC-B6	0-4 FT	13,144 FT ²	1,947 YD ³	2,920 TONS
TOTAL			65,306 FT²	9,674 YD³	14,511 TONS

EXPLANATION

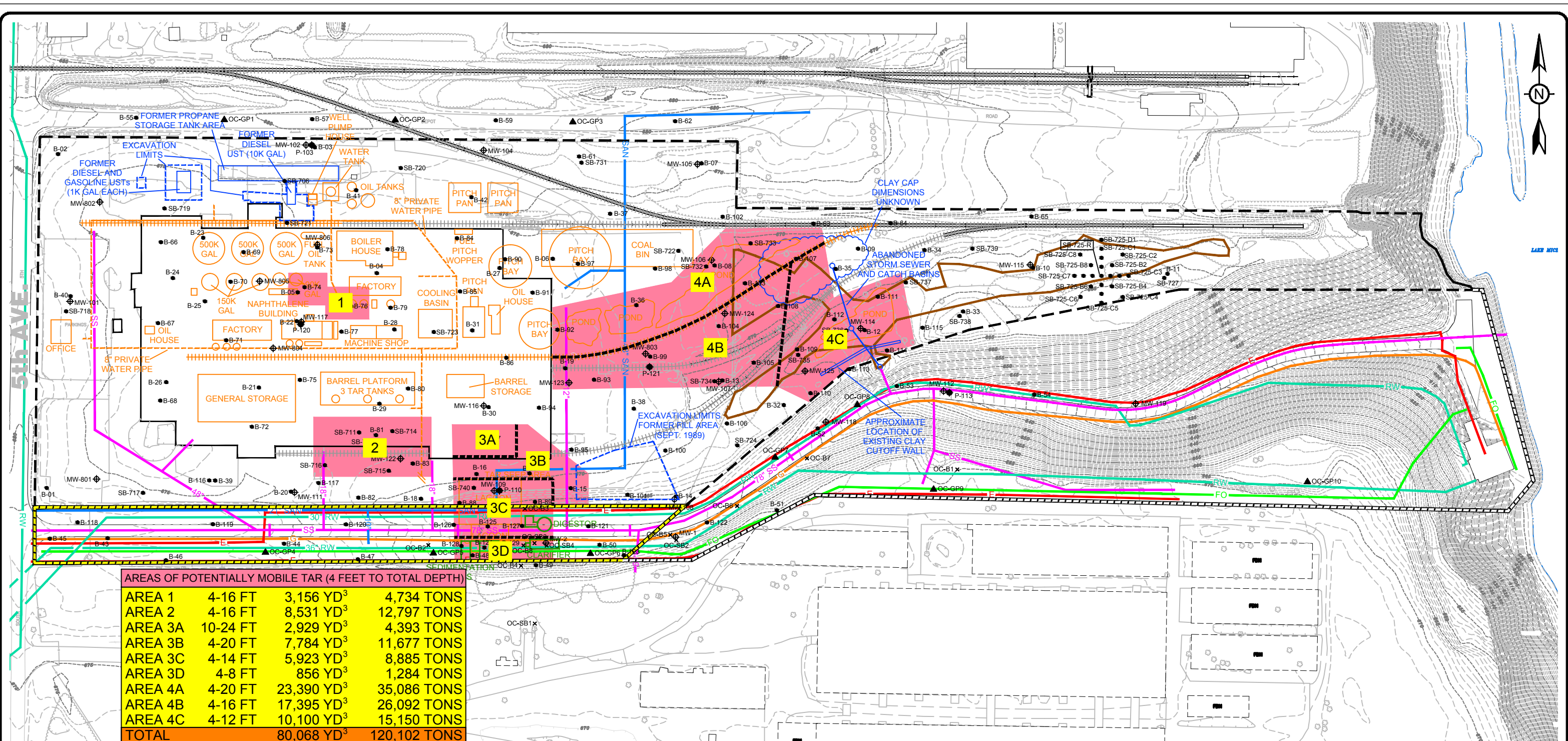
- ⊕ MW-101 WATER TABLE WELL
- P-103 NESTED PIEZOMETER
- B-01 SOIL BORING
- × OC-SB1 SOIL BORING (CITY OF OAK CREEK)
- ▲ OC-GP1 GEOPROBE (CITY OF OAK CREEK)
- APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068)
- APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD)
- ○ FORMER TAR PLANT STRUCTURES
- ○ PAST REMEDIAL ACTIVITIES
- ○ FORMER WASTEWATER TREATMENT PLANT STRUCTURES
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY
- E— ELECTRICAL
- G— NATURAL GAS
- RW— RAW WATER
- SAN— SANITARY
- SS— STORM SEWER
- FO— FIBER OPTIC
- AREAS OF POTENTIALLY MOBILE TAR (0-4 FEET)



- REFERENCE NOTES:**
- EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
 - FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
 - FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
 - FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRASS, INC. - FILE NO. 72051-C-303, 12/11/1971.

TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE
 POTENTIALLY MOBILE TAR 0-4 FT (ALTERNATIVES PMT-1A, PMT-2, AND PMT-3A)
 LOCATION: OAK CREEK, WISCONSIN

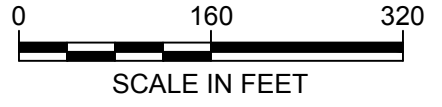
	CHECKED	MRN	FIGURE: 4
	DRAFTED	HJW	
	PROJECT	117-2201323	
	DATE	11/10/14	



AREAS OF POTENTIALLY MOBILE TAR (4 FEET TO TOTAL DEPTH)			
AREA 1	4-16 FT	3,156 YD ³	4,734 TONS
AREA 2	4-16 FT	8,531 YD ³	12,797 TONS
AREA 3A	10-24 FT	2,929 YD ³	4,393 TONS
AREA 3B	4-20 FT	7,784 YD ³	11,677 TONS
AREA 3C	4-14 FT	5,923 YD ³	8,885 TONS
AREA 3D	4-8 FT	856 YD ³	1,284 TONS
AREA 4A	4-20 FT	23,390 YD ³	35,086 TONS
AREA 4B	4-16 FT	17,395 YD ³	26,092 TONS
AREA 4C	4-12 FT	10,100 YD ³	15,150 TONS
TOTAL		80,068 YD³	120,102 TONS

EXPLANATION

- | | | | | | |
|----------|--|-----|---|---------|-------------|
| ⊕ MW-101 | WATER TABLE WELL | □ ○ | FORMER TAR PLANT STRUCTURES | — E — | ELECTRICAL |
| ● P-103 | NESTED PIEZOMETER | □ ○ | PAST REMEDIAL ACTIVITIES | — G — | NATURAL GAS |
| ● B-01 | SOIL BORING | □ ○ | FORMER WASTEWATER TREATMENT PLANT STRUCTURES | — RW — | RAW WATER |
| × OC-SB1 | SOIL BORING (CITY OF OAK CREEK) | □ ○ | APPROXIMATE WETLAND BOUNDARY | — SAN — | SANITARY |
| ▲ OC-GP1 | GEOPROBE (CITY OF OAK CREEK) | □ ○ | APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY | — SS — | STORM SEWER |
| --- | APPROXIMATE WABASH PARCEL BOUNDARY (VPLE 06-41-560068) | □ ○ | APPROXIMATE CITY UTILITY CORRIDOR PROPERTY BOUNDARY | — FO — | FIBER OPTIC |
| --- | APPROXIMATE CITY PARCEL BOUNDARY (VPLE # TBD) | □ ○ | AREAS OF POTENTIALLY MOBILE TAR (4 FEET TO TOTAL DEPTH) | | |



- REFERENCE NOTES:**
- EXISTING TOPOGRAPHY AND SITE FEATURES FROM LAND INFORMATION SERVICES, INC. - ENVIRONMENTAL SURVEY, 12/21/2001.
 - FORMER TAR PLANT STRUCTURES FROM THE SANBORN LIBRARY - EDR INQUIRY 2284158.1s, ©1950.
 - FORMER POND AND LAGOON LOCATIONS FROM 1937-1968 AERIAL PHOTOGRAPHY - COMPILED BY AERO-DATA CORPORATION, APRIL 2013.
 - FORMER WASTEWATER TREATMENT PLANT STRUCTURES FROM HARTMAN-STRESS, INC. - FILE NO. 72051-C-303, 12/11/1971.

TITLE: FORMER KOPPERS TAR PLANT AND WABASH ALLOYS SITE
 POTENTIALLY MOBILE TAR 4 FT TO TOTAL DEPTH (ALTERNATIVES PMT-1B AND PMT-3B)
 LOCATION: OAK CREEK, WISCONSIN

	CHECKED	MRN	FIGURE: 5
	DRAFTED	HJW	
	PROJECT	117-2201323	
	DATE	11/10/14	