McDowell & Associates

Geotechnical, Environmental & Hydrogeological Services • Materials Testing & Inspection

RESPONSE ACTIVITY PLAN- REMEDIAL ACTION PLAN
PROPOSED CAMPBELL WESSON APARTMENTS
5800, 5848, 5850, 5858, AND 5862 MICHIGAN AVENUE
AND 3951 CAMPBELL STREET
DETROIT, WAYNE COUNTY, MICHIGAN

PREPARED FOR:

5800 LDHA LP

AND

SOUTHWEST HOUSING SOLUTIONS CORPORATION

AT THE REQUEST OF:

MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY

.

PREPARED BY:

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OCTOBER 21, 2022

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
REMEDIATION AND REDEVELOPMENT DIVISION
PO BOX 30426, LANSING, MICHIGAN 48909-7926

Request for EGLE Review of Response Activity Plan

This form is required for submittal of a request for EGLE to review a Response Activity Plan, under Section 20114b, Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Section A: Type of Response Activity Plan being Submitted (Check all that apply):

Remedial Investigation	☐	20b(2)Site Specific Criteria	☐
Evaluation Plan	☐	*(modification of generic criteria)*	
Feasibility Study	☐	20b(3) Site Specific Criteria or Surrogate	☐
Remedial Action Plan	☒	*(no generic criteria available)*	
Interim Response Plan	☐	Section 20118(4) and (5) Request	☐
Mixing Zone Request	☐	Land or Resource Use Restrictions	☐
20e(14) De Minimus GSI Impact	☐	Other, Specify:	☐

The Response Activity Plan addresses the entire facility: ☒
(entire facility as defined by Part 201, all releases, hazardous substances, and environmental media)

Remedial actions are proposed to be conducted on all six (6) of the facility parcels identified in the response activity plan.

The Response Activity Plan does not address the entire facility: ☐
Please specify the release(s), hazardous substance(s), environmental media, and/or portions of the facility addressed by the Response Activity Plan:

Section B: Facility/Property Subject to (Check all that apply):

Facility regulated under Part 201 Part 201 Facility ID (if known): 82008002	☒
Leaking Underground Storage Tank regulated pursuant to Part 213 Part 211/213. Facility ID, if known:	☐
Oil or gas production and development regulated pursuant to Part 615 or 625	☐
Licensed landfill regulated pursuant to Part 115	☐
Licensed hazardous waste treatment, storage, or disposal facility regulated pursuant to Part 111	☐
Consent Agreement or other legal agreement with EGLE	☐

Section C: Facility and Locational Information:

Facility Name: Proposed Residential Development

Street Address of Property: 5800, 5848, 5850, 5858, and 5862 Michigan Avenue and 3951 Campbell Street

City: Detroit State: Michigan Zip: 48210

Property Tax ID (include all applicable IDs): 16001706-8, 16001704, 16001703, 16001702, 16001701, and 16014695

Status of submitter relative to the property (check all that apply):

	Former	Current	Prospective
Owner	☐	☒	☐
Operator	☐	☐	☒

County: Wayne
City/Village/Township: Detroit
Town: 2S Range: 11E Section: 11
Quarter: SE Quarter-Quarter: SE-SW

Decimal Degrees Latitude: 42.33157921761778
Decimal Degrees Longitude: -83.11471301286157

Reference point for latitude and longitude:
Center of site ☒ Main/front door ☐
Front gate/main entrance ☐ Other ☐

Collection method:
Survey ☐ GPS ☐ Interpolation ☒

Section D: Submitter Information:

Entity/person requesting review: 5800 LDHA LP	
Contact Person (name and title): Timothy Thorland	State: MI Zip: 48216
Submitter Address: 1920 25th Street, Suite A	E-Mail: tthorland@swsol.org
City: Detroit	
Telephone: 248-914-5223	Company:
Relationship of contact person to the submitter: Asst. Vice President	State: Zip:
Owner Name, if different from submitter:	E-Mail:
Address:	Telephone:
City:	

Section E: Are/were the following present at the facility (Check all that apply):

	Current	Previous	Unknown
Mobile or Migrating Non-Aqueous Phase Liquids (NAPL)	☐	☐	☐
Soil contamination above any residential criteria	☒	☐	☐
Soil contamination above any non-residential criteria	☒	☐	☐
Soil aesthetic impacts	☐	☐	☐
Groundwater contamination above any residential criteria	☐	☐	☐
Groundwater contamination above any non-residential criteria	☐	☐	☐
Groundwater aesthetic impacts	☐	☐	☐
Soil contamination above residential site-specific volatilization to indoor air criteria	☒	☐	☐
Conditions immediately dangerous to life or health (IDLH)	☐	☐	☐
Fire & Explosion hazards related to releases	☐	☐	☐
Contamination existing in drinking water supply	☐	☐	☐
Imminent threat to drinking water supply	☐	☐	☐
Impact to Surface Water	☐	☐	☐
Surface Water Sediments above screening levels	☐	☐	☐

Section F: The following questions assist EGLE in evaluating this request.

Known or Suspected Contaminant(s) Type (Check all that apply):
Petroleum ☒ Volatile Organic Compounds ☒ Metals ☒ Other ☐

Current Site Status (Check all that apply):
Undergoing property transfer ☐ Active operations ☐ Inactive operation ☒

Current Property Use:
Residential ☐
Non-residential ☒ (vacant land)

Anticipated Property Use:
Residential ☒ (mixed use)
Non-residential ☐

Estimated Area of Contamination Addressed in Response Action Plan (Cumulative):
Currently undetermined ☐ < 0.5 acre ☐ > 0.5 acre ☒

Migration:

	Yes	No	Unknown
Has contamination migrated beyond the property **boundaries?**	☐	☒	☐
Has the Notice of Migration been submitted?	☐	☐	☐

Facility Investigation Status:
Ongoing ☐ Complete ☒

Facility Response Activity Status (Check all that apply):
None ☒ IR Implemented ☐ Response Activity Ongoing ☐ Response Activity Completed ☐

Drinking Water Supply for Facility (Check all that apply):
Municipal ☒ Private Well(s) ☐ No Current Water Supply ☐ Municipal Available ☐

On-site Well(s) (Check all that apply):

Drinking Water ☐ Industrial/Commercial Production ☐ Agricultural/Irrigation ☐ No well on-site ☒
Approximate Depth of Well(s):

Local Drinking Water Supply:

Is facility in a designated Wellhead Protection Area? Yes ☐ No ☒
Distance to nearest off-site drinking water well: Private ☐ Municipal ☐

Surface Water Bodies on or Adjacent to Facility (Check all that apply):

Wetlands ☐ Ditch ☐ Stream/River ☐ Lake/Pond ☐

Local Surface Water Bodies:

Distance to nearest wetland: Ditch: Stream/River: Lake/Pond:

Have other plans been submitted for this facility?

Facility Name, if different than this submittal: 5800 Michigan Avenue
Date and Name of most recent submittal: BEA 82008002, B201406057LV, B201406058LV

Section G: Environmental Professional Signature:

With my signature below, I certify that this plan and all related materials are true, accurate, and complete to the best of my knowledge and belief.

Signature: Date: 10/25/2022

Printed Name: Douglas M. McDowell

Company of Environmental Professional: McDowell & Associates

Address: 21355 Hatcher Avenue

City: Ferndale State: MI Zip: 48220

Telephone: (248) 399-2066 E-mail address: doug.mcdowell@mcdowasc.com

Section H: Submitter Signature:

With my signature below, I certify that this plan and all related materials are true, accurate, and complete to the best of my knowledge and belief and I am legally authorized to sign for the submitter.

Signature: Date: 10/24/22

Printed name: Timothy Thorland

Title/Relationship of signatory to submitter: Assistant Vice President

Address: 1920 25th Street, Suite A

City: Detroit State: MI Zip: 48216

Telephone: (248) 914-5223 E-Mail address: tthorland@swsol.org

This form and the Response Activity Plan should be submitted to EGLE Remediation & Redevelopment Division District Office for the county in which the property is located, unless the response activity is related to a facility that is regulated by another EGLE Division. A district map is located at www.michigan.gov/EGLErrd. If regulated by another division, contact should be made with that division for information on where to submit the form and plan.

For information or assistance on this publication, please contact the (program), through EGLE Environmental Assistance Center at 800-662-9278. This publication is available in alternative formats upon request.
EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.
This form and its contents are subject to the Freedom of Information Act and may be released to the public.

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1.0 EXECUTIVE SUMMARY

McDowell & Associates has prepared this Response Activity Plan - Remedial Action Plan (ResAP) and is submitting it to EGLE for review and approval as allowed under Section 20114b, Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, Act 451 of 1994, as amended (NREPA). The ResAP proposes the remedial actions to be undertaken as necessary to submit and document the basis for concluding the remedial actions undertaken satisfies the cleanup criteria for unrestricted residential use for the hazardous substances and facilities to be addressed in a future No Further Action (NFA) Report:

5800 Michigan Avenue – Tax ID #16001706-8
5848 Michigan Avenue – Tax ID #16001704
5850 Michigan Avenue – Tax ID #16001703
5858 Michigan Avenue – Tax ID #16001702
5862 Michigan Avenue – Tax ID #16001701
3951 Campbell Street – Tax ID #16014695

The subject property consists of six parcels totaling an approximately 1.177 acres of land located north of Michigan Avenue between Wesson Avenue and Campbell Street. For development purposes, the subject property has been divided into two projects: “Campbell Property” (east portion at 5800 Michigan Avenue and 3951 Campbell Street) and “Wesson Property” (west portion at 5848, 5850, 5858, and 5862 Michigan Avenue).

The subject property has been demonstrated to be a “facility” based on detections of PNAs, tetrachloroethene, and metals in soil above applicable EGLE generic residential criteria. Remedial actions at the subject property will consist of excavation of contaminated soil to support completion of an Unrestricted Residential No Further Action (NFA) Report for the media soil, for all relevant pathways at the subject property.

5800 LDHA LP is requesting EGLE review and approval of this ResAP.

2.0 PROPERTY DESCRIPTION

The subject property consists of an approximate 1.177-acre parcel located north of Michigan Avenue between Wesson Avenue and Campbell Street.

A Site Location Map, which shows the approximate location of the subject property, accompanies this report as Figure 1.

A legal description/Alta Survey for the subject property is included as Attachment I.

The subject property is currently vacant land and is located within an urban area characterized by commercial buildings along Michigan Avenue and residential buildings to the north along Campbell Street and Wesson Avenue. A Site Sketch, which depicts the existing property, is included as Figure 2.

There are no known land use restrictions recorded at the subject property, with the exception of a Deed Restriction recorded in March 2014 restricting certain commercial sales uses at the property. A copy of Declaration of Restrictions is included as Attachment II.

The subject property is cleared, vacant land. Based on recent site observations and information in previous reports for the subject property, no existing USTs, ASTs, or containers have been identified at the subject property.

The subject property is proposed to be developed with two mixed use buildings.

The subject property is serviced with municipal water and combined storm and sanitary sewer systems in the City of Detroit. There are no current or planned water wells on the property or adjacent properties.

There are no known easement holders of record on the subject property.

3.0 HISTORICAL PROPERTY USE

The subject property was historically developed with industrial and residential uses since at least the late 1800's. In general, the north portion was historically residential use and the south portion was industrial and commercial uses. The property has been vacant since at least 2014. The property is planned for multi-family residential development.

McDowell & Associates has been provided or obtained the following reports for the subject property and adjoining land. This information is pertinent because it provides historical background of the property used to determine scope of work for follow-up activities. Additional information related to site characterization is included in following sections.

Title	Author	Date	Property	Relevant Information
Phase I ESA (text and site map only)	AEMG	11/1/2010	Subject property and adjoining land to the north	Eight RECs identified on that property.
Phase II ESA	AKT Peerless	1/7/2011	Subject property and adjoining land to the north	Geophysical completed. 12 borings made on the SP. 22 soil samples submitted for chemical testing.
Phase I ESA	PME	11/22/2013	Subject property and adjoining land to the north	Two RECs identified on that property.
Phase II ESA*	PME	3/31/2014	Subject property and adjoining land to the north	Geophysical completed. Nine borings made on the SP. Ten soil samples and three soil gas samples

Title	Author	Date	Property	Relevant Information
				submitted for chemical testing.
BEA	PME	3/31/2014	East portion of subject property at 5800 Michigan Avenue.	That property identified as a "facility" based on benzo(a)pyrene and lead in soil above EGLE Generic Residential Direct Contact Criteria.
BEA	PME	3/31/2014	West portion of subject property at 5862 Michigan Avenue.	That property identified as a "facility" based on tetrachloroethene and benzo(a)pyrene in soil above EGLE Generic Residential Direct Contact Criteria.
Phase I ESA	PME	1/15/2021	West portion of subject property	One REC identified.
Phase II ESA	PME	3/25/2022	West portion of subject property	11 soil borings made on the SP and three soil gas points installed. 22 soil samples and 3 soil gas samples submitted for testing.
Phase I ESA	PME	6/30/2022	West portion of subject property	Summarized reports referenced above. One REC identified. Refer below.
Subsurface Investigation	McDowell & Associates	8/12/2022	Subject Property	12 test pits and 25 soil borings, chemical testing of 48 soil samples.

SP- subject property
REC- recognized environmental condition
AEMG- Advanced Environmental Management Group (AEMG)
PME- PM Environmental, Inc.
*not provided. Select information related to 5800 Michigan Avenue included in the 2014 BEA

Based on review of the above-referenced reports, the following RECs exist at the subject property:

1. 5830 (5800) Michigan Avenue – Four former USTs, former gasoline service station
2. 5836 (5800) Michigan Avenue – Former vulcanizing
3. 5846 (5848) Michigan Avenue – former photography shop
4. 5858 Michigan Avenue – former greenhouse
5. 5862-64 Michigan Avenue – former dry cleaners

The accompanying Figure 3- Recognized Environmental Condition (REC) Map depicts the RECs identified on the individual parcels with subdued boring and test pit locations.

Excerpts from the prior reports have been reproduced for this RespAP and appended.

4.0 RELEVANT EXPOSURE PATHWAYS

Potential Pathway	Relevant Property Conditions/ Discussion	Relevant (yes or no)
Drinking Water/ Drinking Water Protection	This pathway is relevant to all groundwater in an aquifer. No significant groundwater was encountered in soil borings and test pits made on the Subject Property.	No
Direct contact	This pathway is relevant for all land uses.	Yes
Particulate Soil Inhalation	This pathway is relevant for all land uses.	Yes
Volatile Soil Inhalation – Infinite Source	The pathway is relevant for all land when volatile hazardous substances are present in soils.	Yes
Soil Volatilization to Indoor Air	The pathway is relevant for all land when volatile hazardous substances are present in soils.	Yes
Groundwater Volatilization to Indoor Air	This pathway is relevant for all land uses and volatile hazardous substances for both groundwater in an aquifer and groundwater not in an aquifer. No significant groundwater was encountered in soil borings and test pits made on the Subject Property.	No
Groundwater-surface water interface	This pathway is relevant for all land uses if there is a hydraulic connection between the groundwater and a surface water body. No significant groundwater was encountered in soil borings and test pits made on the Subject Property.	No

The drinking water/drinking water protection, groundwater surface water interface/groundwater surface water protection pathways, and the groundwater volatilization to indoor air pathway are not relevant pathways at the subject property for the following reason:

- No significant groundwater was encountered in soil borings and test pits made on the Subject Property.

5.0 ASSESSMENT OF APPLICABILITY OF GENERIC CLEANUP CRITERIA

Based on the size of the subject property (1.177 acres), the EGLE Generic Residential Volatile Soil Inhalation and Particulate Soil Inhalation Criteria was adjusted using the Modifier of 0.77.

McDowell & Associates was provided a copy of Site-Specific Volatilization to Indoor Air Criteria (SS VIAC) developed by EGLE for the subject property on March 21, 2022. A copy is included as Attachment III.

Contaminants detected on the subject property were compared to the following:

- Statewide Default Background Levels for metals
- EGLE Generic Residential Direct Contact Criteria
- EGLE Generic Residential Ambient Air Inhalation Criteria- Particulate Soil
- EGLE Generic Residential Ambient Air Inhalation Criteria- Volatile Soil
- EGLE-provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC) obtained for the property (3/21/2022)
- EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Level for Mercury

DRO and GRO testing was not conducted at the property to evaluate the potential for residual NAPL in soil. Comparison to the EGLE Generic Residential Direct Contact Criteria may not be appropriate. Contaminated soil (including all fill) at the subject property is planned for removal and disposal.

Verification samples will be compared to the following:

- Statewide Default Background Levels for metals, if determined applicable
- Calculated Background Level for the Huron-Erie Glacial Lobe for arsenic (14.9 mg/kg for underlying native clay), if demonstrated to be applicable
- EGLE Generic Residential Direct Contact Criteria, provided detected DRO and GRO concentrations are below the established screening levels
- EGLE Generic Residential Ambient Air Inhalation Criteria- Particulate Soil (modified)
- EGLE Generic Residential Ambient Air Inhalation Criteria- Volatile Soil (modified)
- EGLE-provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC) obtained for the property (3/21/2022)

Gasoline Range Organic (GRO) testing will be completed at sample locations where multiple VOCs are detected and considered to remain on-site to determine if the generic residential direct contact criteria are applicable for comparison. As long as GRO test results are less than 500 ppm, then generic direct contact criteria will be considered applicable.

If concentrations of non-volatile and/or not likely to volatilize PNAs are detected and considered to remain on-site, samples will be analyzed for diesel range organics (DRO) to determine the

presence of residual NAPL (DRO >1,050 ppm) and the application of the generic residential direct contact criteria.

6.0 FACILITY CHARACTERIZATION

Multiple environmental investigations and two geophysical investigations have been completed by McDowell & Associates and others since 2010 for the subject property and adjoining land. As part of those investigations, a total of 57 soil boring and 12 test pits have been completed. A total of 102 soil samples and 6 soil gas samples have been collected from the property and submitted for laboratory analyses. Groundwater was not reported in any of the borings or test pits completed at the property.

Hazardous substances tested for in soil samples has consisted of some, or all, of the following:

Volatile organic compounds (VOCs)	Herbicides
Polynuclear aromatic hydrocarbons (PNAs)	Pesticides
10 Michigan Metals	Diesel range organics (DRO)
Polychlorinated biphenyls (PCBs)	Gasoline range organics (GRO)

The following table shows sample identification, testing program, and exceedances of current applicable generic residential criteria and SSVIAC.

Sample ID	Date	Depth	Testing Program	Exceedances	Criteria Exceeded
3951 Campbell					
SB-15	12/19/2013	5-6'	VOC, PNA, PCB, 10MM	None	---
2a	7/15/2022	0’- 1’	PNA, mercury, lead	Pb, Hg	DC, SSVIAC
2b	7/15/2022	2’- 3’	VOC, PNA, mercury, lead	None	---
5800 Michigan					
CO-SB-1	12/17/2010	4’- 6’	VOC, PNA, DRO, GRO, Pb, Cd, Cr	None	---
CO-SB-1	12/17/2010	10’- 12’	VOC, PNA, Pb, Cd, Cr	None	---
CO-SB-2	12/17/2010	10’- 12’	VOC, PNA, Pb, Cd, Cr	None	---
CO-SB-3	12/17/2010	1’- 3’	VOC, PNA, Pb, Cd, Cr	None	---
CO-SB-3	12/17/2010	4’- 6’	VOC, PNA, Pb, Cd, Cr	None	---
CO-SB-4	12/17/2010	2’- 4’	VOC, PNA, Pb, Cd, Cr	None	---
CO-SB-5	12/17/2010	2’- 4’	VOC, PNA, PCB, 10MM	None	---
CO-SB-5	12/17/2010	4’- 6’	VOC, PNA	None	---
CO-SB-6	12/17/2010	2’- 4’	VOC, PNA	None	---
CO-SB-6	12/17/2010	4’- 6’	VOC, PNA	None	---
CO-SB-12	12/17/2010	2’- 4’	VOC, PNA	PNAs	SSVIAC, DC
SB-1	12/18/2013	1-2'	VOC, PNA, PCB, 10MM	None	---
SB-1	12/18/2013	8-9'	VOC, PNA	None	---
SG-1	12/18/2013	1’	VOC	None	---

Sample ID	Date	Depth	Testing Program	Exceedances	Criteria Exceeded
SB-2	12/18/2013	3-4'	VOC, PNA, PCB, 10MM	Hg	SSVIAC
SB-3	12/18/2013	4-5'	VOC, PNA, PCB, 10MM	None	---
SB-4	12/18/2013	2.5-3.5'	VOC, PNA	None	---
SB-5	12/18/2013	1-2'	VOC, PNA	None	---
SB-6	12/18/2013	5-6'	VOC, PNA	None	
SB-7	12/18/2013	3-4'	VOC, PNA	PNAs	SSVIAC, DC
SB-8	12/18/2013	2-3'	VOC, PNA, PCB, 10MM	PNAs, Pb	SSVIAC, DC
SG-8	12/18/2013	2’	VOC	None	---
SB-9	12/18/2013	2-3'	VOC, PNA, PCB	None	---
SG-9	12/18/2013	2’	VOC	None	---
SG-13	11/23/2021	7.5’	SVOC, Hg	None	---
SB-13	11/22/2021	3-4'	VOC, PNA, Pb, Hg	PNAs	SSVIAC
SB-13	11/22/2021	4.5-5.5'	VOC, PNA, Pb, Hg	None	---
SB-14	11/22/2021	3-4'	VOC, PNA, Pb	PNAs	SSVIAC, DC
SB-14	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SG-14	11/23/2021	5’	VOC, SVOC, Hg	None	---
SB-15	11/22/2021	2.5-3.5'	VOC, PNA, Pb	None	---
SB-15	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-16	11/22/2021	3-4'	VOC, PNA, Pb	PNAs	SSVIAC, DC
SB-16	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-17	11/22/2021	3.5-4.5'	VOC, PNA, Pb	PNAs	SSVIAC, DC
SB-17	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-18	11/22/2021	2.5-3.5'	VOC, PNA, Pb	PNAs, Pb	SSVIAC, DC
SB-18	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-19	11/22/2021	3-4'	VOC, PNA, Pb	None	---
SB-19	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-20	11/22/2021	3-4'	VOC, PNA, Pb	Pb	DC
SB-20	11/22/2021	5-6'	VOC, PNA, Pb	PNAs	SSVIAC, DC
SG-20	11/23/2021	5’	VOC, SVOC, Hg	None	---
SB-21	11/22/2021	2.5-3.5'	VOC, PNA, Pb	PNAs	SSVIAC
SB-21	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-22	11/22/2021	2.5-3.5'	VOC, PNA, Pb	Pb	DC
SB-22	11/22/2021	5-6'	VOC, PNA, Pb	None	---
SB-23	11/22/2021	2.5-3.5'	VOC, PNA, Pb	PNAs	SSVIAC, DC
SB-23	11/22/2021	5-6'	VOC, PNA, Pb	None	---
102a	7/21/2022	1’- 2’	Lead	None	---
102b	7/21/2022	2’- 2’6”	Lead	None	---
103d	7/21/2022	5’- 6’	VOCs, PNAs	None	---

Sample ID	Date	Depth	Testing Program	Exceedances	Criteria Exceeded
104a	7/21/2022	1’- 2’	Lead	None	---
104b	7/21/2022	2’- 3’	Lead	None	---
107a	7/21/2022	0’- 1’	Lead	None	---
107b	7/21/2022	2’- 2’6”	Lead, composite TCLP lead	Pb	DC
107c	7/21/2022	3’- 3’6”	Lead	None	---
108a	7/21/2022	1’- 2’	Lead	None	---
108b	7/21/2022	3’- 3’6”	Lead, composite TCLP lead	None	---
111c	7/21/2022	2’- 3’	Lead	None	---
112a	7/21/2022	1’- 2’	Lead	None	---
113a	7/21/2022	1’- 2’	Lead	None	---
114c	7/21/2022	2’- 3’	Lead	None	---
116b	7/21/2022	2’- 3’	Lead	Pb	DC
116c	7/21/2022	3’6”- 4’	Lead	None	---
117b	7/21/2022	1’- 2’	Lead	Pb	DC
117c	7/21/2022	3’- 4’	Lead, composite TCLP lead	None	---
117d	7/21/2022	4’6”- 5’6”	Lead	None	---
118d	7/21/2022	6’- 7’	Lead, composite TCLP lead	None	---
119c	7/21/2022	4’- 5’	Lead, composite TCLP lead	None	---
122c	7/21/2022	3’6”- 4’6”	Lead, TCLP lead	Pb	DC
123c	7/21/2022	3’6”- 4’6”	Lead, composite TCLP lead	None	---
124c	7/21/2022	3’6”- 4’6”	Lead	Pb	DC
5848 Michigan					
CO-SB-7	12/17/2010	1’- 3’	VOC, PNA, 10MM	Hg	SSVIAC
CO-SB-7	12/17/2010	4’- 6’	VOC, PNA, 10MM	None	---
SB-12	12/18/2013	3.5’- 4.5’	VOC, PNA	None	
12b	7/15/2022	3’6”- 4’	VOC, PNA, mercury, lead	Hg	SSVIAC
12c	7/15/2022	5’- 6’	VOC, PNA, mercury, lead	None	---
5850 Michigan					
7b	7/15/2022	3’- 4’	VOC, PNA, mercury, lead	PNAs, Hg	SSVIAC, DC
7c	7/15/2022	5’- 6’	VOC, PNA, mercury, lead	PNAs, Pb, Hg	SSVIAC, DC
7e	7/15/2022	7’- 7’10”	VOC, PNA, mercury, lead	PNAs	SSVIAC, DC
8b	7/15/2022	3’- 4’	VOC, PNA, mercury, lead	Pb, Hg	DC, SSVIAC
9b*	7/15/2022	3’- 4’	VOC, PNA, mercury, lead	PNAs, Hg	SSVIAC
9c	7/15/2022	5’8”- 6’	VOC, PNA, mercury, lead	None	---
5858 Michigan					
CO-SB-8	12/17/2010	1’- 3’	VOC, PNA, Herbicides, pesticides	PCE	SSVIAC
CO-SB-8	12/17/2010	4’- 6’	VOC, PNA, Herbicides, pesticides	PCE	SSVIAC
4b	7/15/2022	3’- 3’6”	VOC, PNA, mercury, lead	PNAs, Hg	SSVIAC, DC

Sample ID	Date	Depth	Testing Program	Exceedances	Criteria Exceeded
5a	7/15/2022	1’- 2’	VOC, PNA, mercury, lead	Hg, benzene, PCE, PNAs	DC, SSVIAC
5b	7/15/2022	3’- 4’	VOC, PNA, mercury, lead	None	---
6a	7/15/2022	2’- 3’	VOC, PNA, mercury, lead	PNAs, PCE, Hg	SSVIAC, DC
6b	7/15/2022	3’6”- 4’6”	VOC, PNA, mercury, lead	PCE	SSVIAC
5862 Michigan					
CO-SB-9	12/17/2010	2’- 4’	VOC	PCE	SSVIAC
CO-SB-9	12/17/2010	13’- 15’	VOC	None	
CO-SB-10	12/17/2010	3’- 5’	VOC	PCE	SSVIAC
CO-SB-10	12/17/2010	12’- 14’	VOC	None	
CO-SB-11	12/17/2010	7’- 9’	VOC	PNAs, PCE	SSVIAC
CO-SB-11	12/17/2010	13’- 15’	VOC	None	---
SG-10	12/18/2013	4.5’	VOC	None	
SB-10	12/18/2013	4-5'	VOC, PNA, PCB, 10MM	PNAs, PCE	SSVIAC, DC
SB-10	12/18/2013	8-9'	VOC, PNA	None	
SB-11	12/18/2013	4-5'	VOC, PNA, PCB, 10MM	PCE, Hg	SSVIAC
SB-11	12/18/2013	9-10'	VOC, PNA	None	
3b	7/15/2022	2.5’- 3’	VOC, PNA, mercury, lead	Hg, PCE	SSVIAC
3c	7/15/2022	3.5’- 4’	VOC, PNA, mercury, lead	PCE	SSVIAC
3e	7/15/2022	4.5’- 5’	VOC, PNA, mercury, lead	Hg, PNAs, PCE	SSVIAC
125b	7/21/2022	4’- 5’	VOCs	None	---

VOCs- volatile organic compounds
PNAs- polynuclear aromatic hydrocarbons
PCBs- polychlorinated biphenyls
10MM- Ten Michigan Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, zinc)
PCE- tetrachloroethene
Pb- lead
Hg- mercury
TCLP- toxicity characteristic leaching procedure (for waste characterization purposes)
DC- direct contact
SSVIAC - Site-Specific Volatilization to Indoor Air Criteria

DRO and GRO testing was not conducted at the property to evaluate the potential for residual NAPL in soil. Comparison to the EGLE Generic Residential Direct Contact Criteria may not be appropriate. Contaminated soil (including all fill) at the subject property is planned for removal and disposal.

Figures 5A through 5D- Soil Exceedance Maps are provided which show recent and historic chemical test results above applicable generic residential criteria and SSVIAC.

There were no known exceedances of the generic VSI or PSI criteria.

7.0 GEOLOGY AND HYDROGEOLOGY

Subsurface conditions at the property consisted of non-native sandy fill soil with industrial and residential debris underlain by apparent naturally deposited brown, variegated, and blue silty clay. Fill soil on the subject property is planned for removal.

8.0 REMEDIAL ACTION PLAN

The proposed remedial actions are based on previous sampling and testing completed by others and by McDowell & Associates' recent Subsurface Investigation.

Contaminated soil and unsuitable fill soil removal and disposal will be completed at the subject property to ensure removal of contamination to allow for unrestricted residential use of the subject property, which is the objective of remedial actions.

A Proposed Soil Removal Map, which depicts the proposed soil removal areas, accompanies this ResAP as Figure 6.

Contaminated soil and unsuitable fill soil will be removed and disposed at a Type II landfill. Test results showed elevated metals, PNAs, and VOCs in samples collected from soil and fill at concentrations above applicable residential generic and site-specific criteria for these relevant pathways at the subject property:

- Direct Contact
- VIAP

Proposed Remedial Actions include:

- Contaminated soil excavation, transport, and disposal at Type II landfill. Based on subsurface conditions encountered on the subject property, it is expected that the entirety of the subject property will be excavated to at least the depth at which native clay is present.

- Observation of excavating activities and soil screening by McDowell & Associates' environmental personnel with a photoionization detector (PID). In addition to contaminated soil and unsuitable fill soil, soil with elevated PID readings will be excavated and disposed. A PID with an 11.2 eV lamp will be used for the area of the subject property with former drycleaner use. A PID with a 10.7 eV lamp will be used for the area of the subject property with the former gasoline USTs.

- Verification sampling will be conducted of underlying clay soil following soil removal in general accordance with the Verification of Soil Remediation portion of the EGLE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria (S3TM, 2002). Statistical guide sheets for each exposure pathway

are include in the S3TM and identify if the use of statistical sampling is appropriate for a given pathway. For the direct contact pathway for residential land use with an exposure unit size of ¼ acre the guide sheet indicates yes. For the VIAP, the guide sheet indicates it is not generally practical based on the size of the exposure unit (1,200 square feet) that must be considered for verification sampling.

To determine the appropriate verification sampling at the subject property, the area of the excavation floor will be divided into ¼ acre exposure units. The appropriate grid interval will be established for each exposure unit and samples collected from a minimum of 9 grid intervals. The grid and sample location within the grids will be determined by the Systematic Random Sampling method. Additional biased samples will be obtained from soil considered most likely to exceed cleanup criteria. Determination will be made using a photoionization detector (PID), visual and olfactory evidence of contamination, soil conditions, historic site use, and prior test results.

Soils are planned to be removed to just beyond the subject property boundaries. Surveyed property line stakes will be used to confirm the property boundary during remedial activities. Excavation sidewall sampling is not planned as the sidewalls will be offsite.

Verification soil samples, plus appropriate QA/AC samples, will initially be analyzed for VOCs (Method 8260), polynuclear aromatic hydrocarbons (PNAs, Method 8270), and the Ten Michigan Metals.

If concentrations of VOCs or volatile PNAs are detected in verification sample test results above the SSVIAC, then additional soil will be removed and additional verification samples collected to document an absence of a source of vapors in soil (non-detect or less than the SSVIAC). Gasoline Range Organic (GRO) testing will be completed at sample locations where multiple VOCs are detected and considered to remain on-site. As long as GRO test results are less than 500 ppm, then generic criteria direct contact criteria for VOCs will be considered applicable.

If multiple PNAs are detected in samples considered to remain on-site, samples will be analyzed for diesel range organics (DRO) to determine the presence of residual NAPL (DRO >1,050 ppm) and the application of the generic residential direct contact criteria. If detected DRO concentrations are above 1,050 ppm, additional soil will be removed and additional verification samples collected and analyzed for PNAs and DRO.

If demonstrated to be appropriate, McDowell & Associates will compare metals verification sample test results to the applicable Statewide Default Background Levels or calculated Background Levels for the Huron-Erie Glacial Lobe for arsenic (14.9 mg/kg for underlying native clay), EGLE-provided SSVIAC, and applicable generic residential direct contact criteria (if detected GRO or DRO

concentrations support comparison to generic criteria). To eliminate the need for further assessment of the VIAP for mercury, native soils containing mercury above the Statewide Default Background Level will be removed with verification of removal through appropriate sampling.

Verification soil sample test results will be also compared to the appropriately adjusted residential criteria for the Volatile Soil Inhalation and Particulate Soil Inhalation pathways.

Excavations will be backfilled with soil that will be compacted to a state suitable to support future foundations, floor slabs, utilities, and pavements. Prior to placement as backfill, the source soil will be sampled and tested to document the soil meets EGLE Criteria for unrestricted residential use for all relevant pathways. Representative samples will be collected depending on number of sources and types of backfill soil. Chemical testing program to be determined by McDowell & Associates in consultation with EGLE. Compaction testing will be completed to provide QA/QC to the backfilling process.

An Unrestricted Residential No Further Action Report will be completed and submitted to EGLE following completion of the above-referenced remedial actions.

9.0 LIMITATIONS

Nothing in this report constitutes a legal opinion or legal advice. It is suggested that environmental counsel be retained to evaluate site conditions and transaction-related issues from a legal perspective.

Property lines shown on maps are estimates and are limited by scale inaccuracies. The approximate boundaries shown on report attachments are not intended to be exact, but rather approximations to assist with review.

10.0 CONCLUSIONS

McDowell & Associates has prepared this Response Activity Plan - Remedial Action Plan (ResAP) and is submitting to EGLE for review and approval as allowed under Section 20114b, Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, Act 451 of 1994, as amended (NREPA). The ResAP proposes the remedial actions to be undertaken as necessary to submit and document the basis for concluding the remedial actions satisfies the cleanup criteria for unrestricted residential use for the hazardous substances in soils present at the subject property.

Figures

Figure 1- Site Location Map
Figure 2- Site Sketch
Figure 3- REC Map
Figure 4- Soil Boring Location Map
Figure 5- Soil Sample Exceedance Map
Figure 6- Proposed Soil Excavation Map
Figure 7- Proposed VSR Sample Location Map

Tables

Table 1- Summary of Metals Chemistry Results (Soil)
Table 2- Summary of PNAs Chemistry Results (Soil)
Table 3- Summary of Detected VOCs Chemistry Results (Soil)
Table 4- Summary of Detected VOCs Chemistry Results (Soil Gas)

Attachments

I- Legal Description/Alta Map
II- Declaration of Restriction
III- EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria
IV- Previous Reports Excerpts

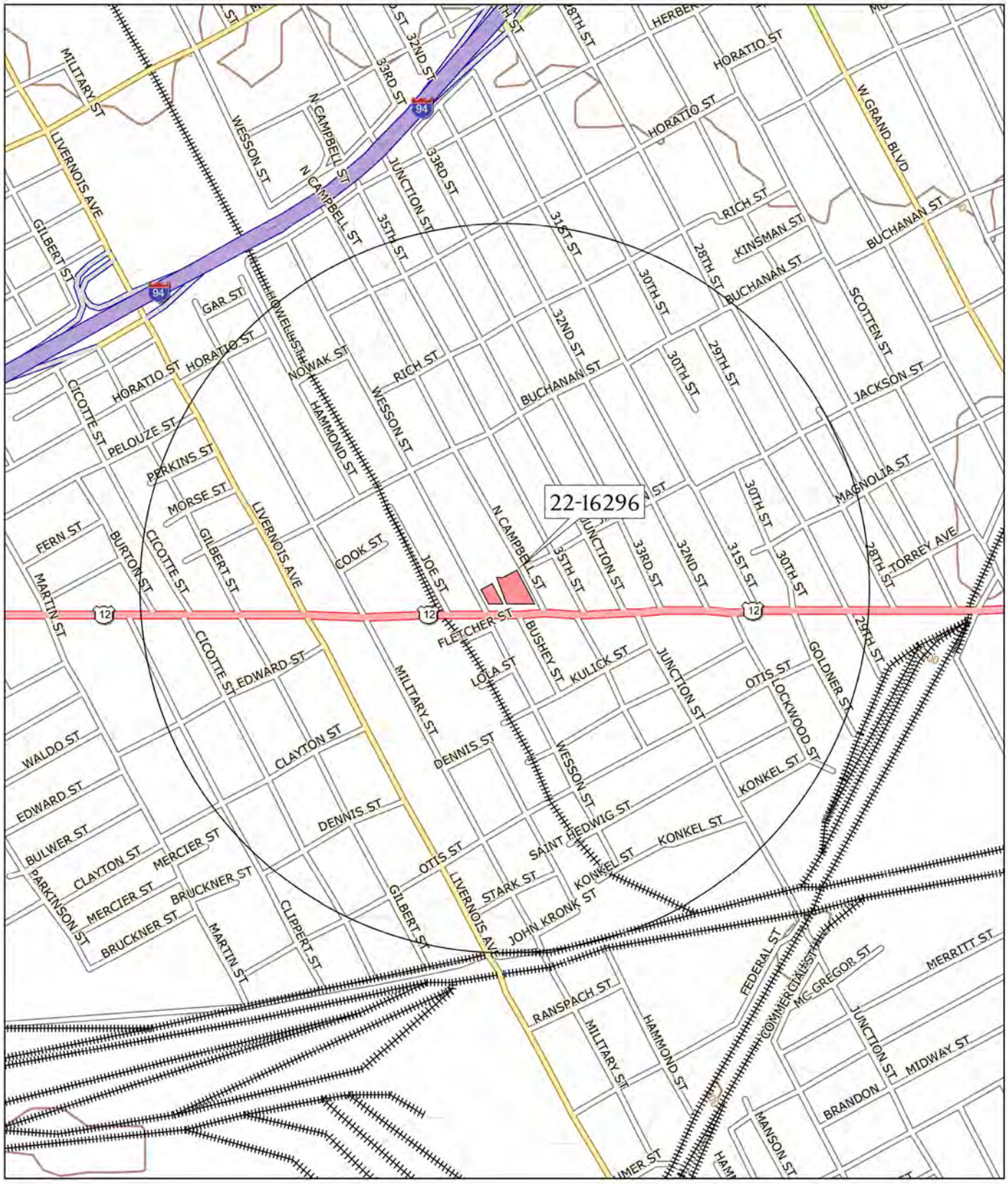
Figure 1

Site Location Map

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 1 - SITE LOCATION MAP



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TN

MN (7.7°W)

Scale 1 : 12,000

1" = 1,000.0 ft

Data Zoom 14-0

Figure 2

Site Sketch

McDowell & Associates

Job Number: 22-16296

Figure 2 - Site Sketch

LEGEND

— APPROXIMATE PROPERTY BOUNDARY

NOTES:

- ALL LOCATIONS APPROXIMATE
- 2021 AERIAL PHOTOGRAPH

N

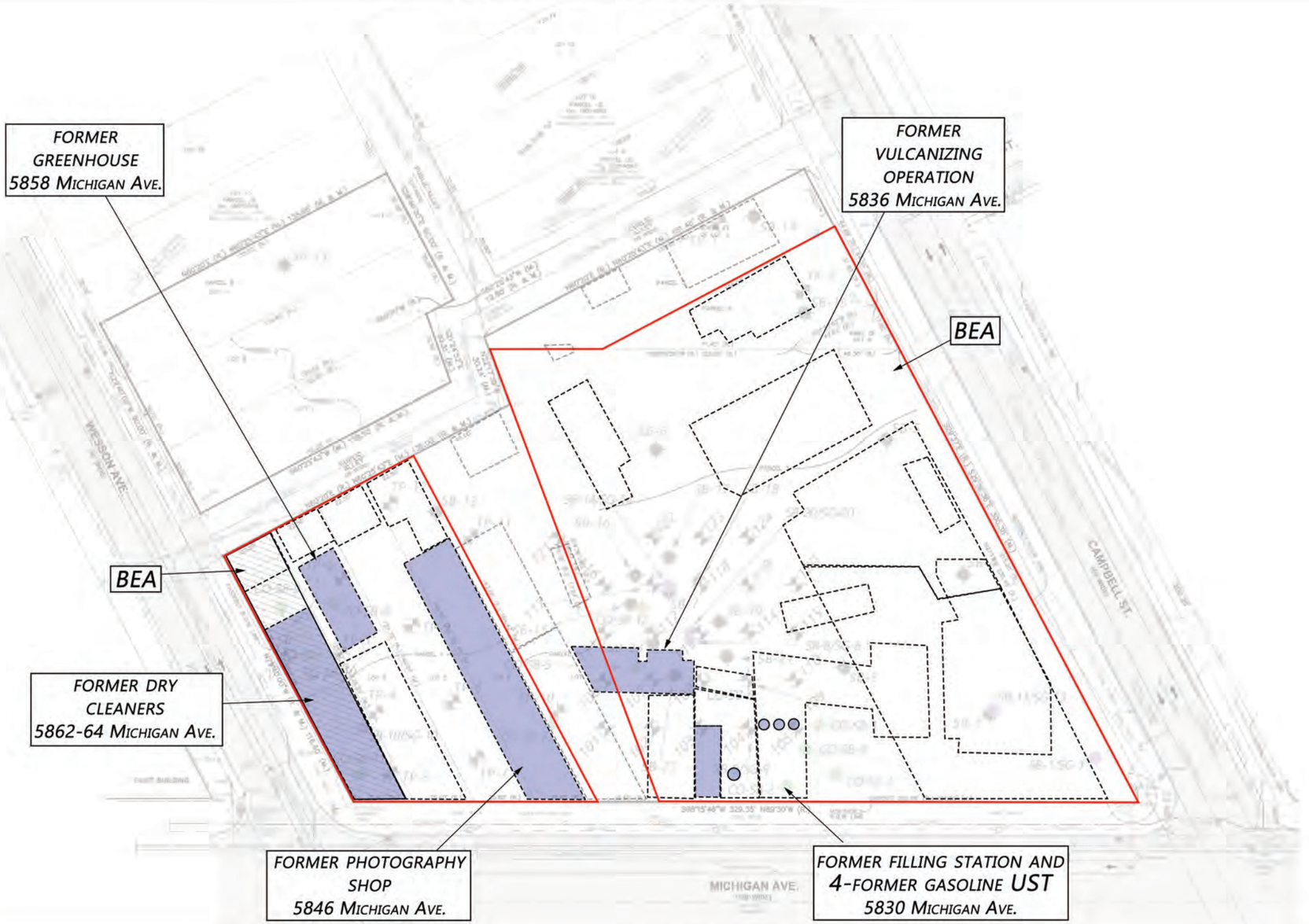
Figure 3

REC Map

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 3 - REC MAP



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY
- ---- FORMER STRUCTURES

REC - RECOGNIZED ENVIRONMENTAL CONDITION

BEA - BASELINE ENVIRONMENTAL ASSESSMENT

NOTES:

- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

1" = 50'

0 50'

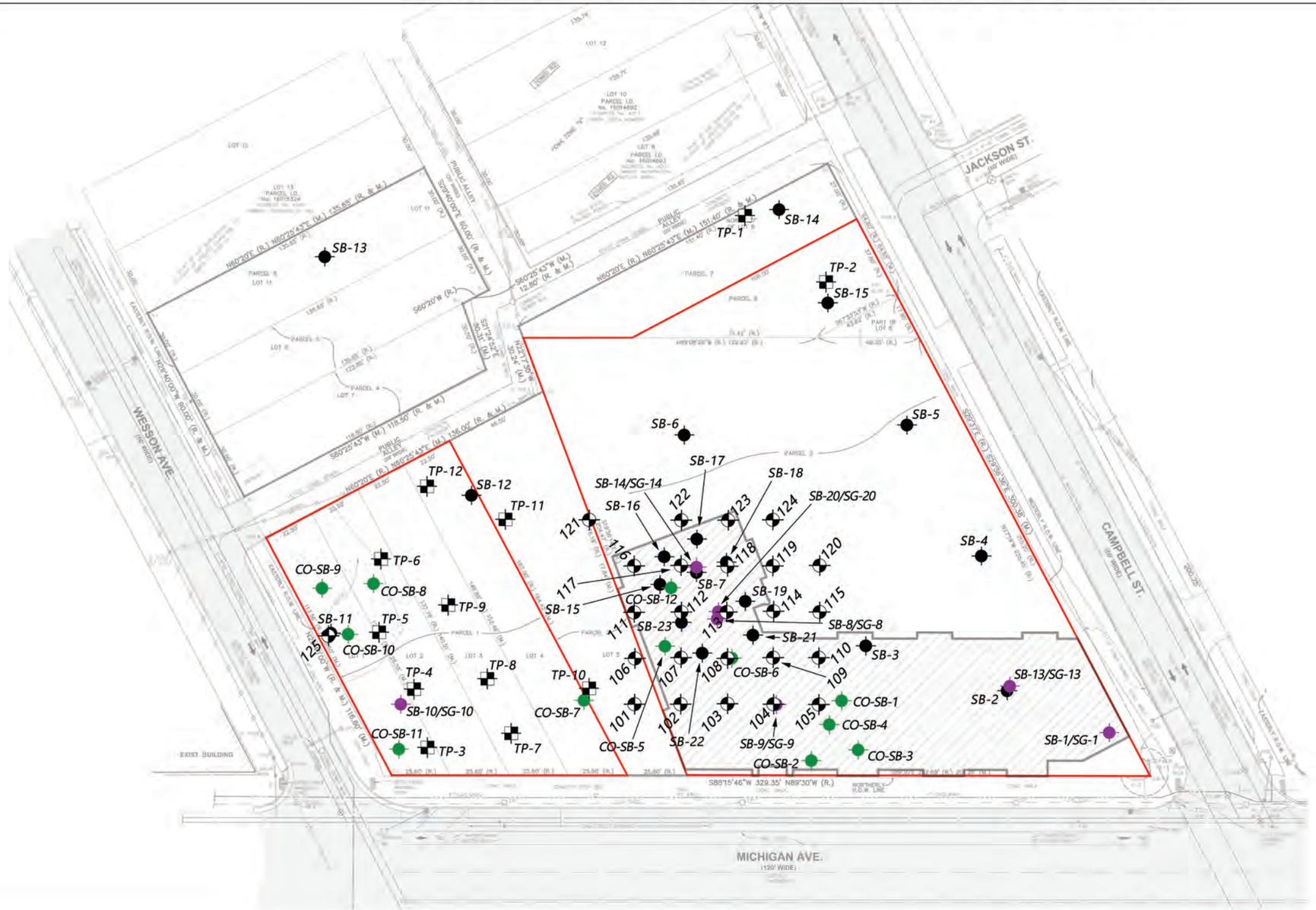
Figure 4

Soil Boring Location Map

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 4 - SOIL BORING & TEST PIT LOCATION MAP



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE SUBJECT PROPERTY BOUNDARY

NOTES:

- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

1" = 50'

0 50'

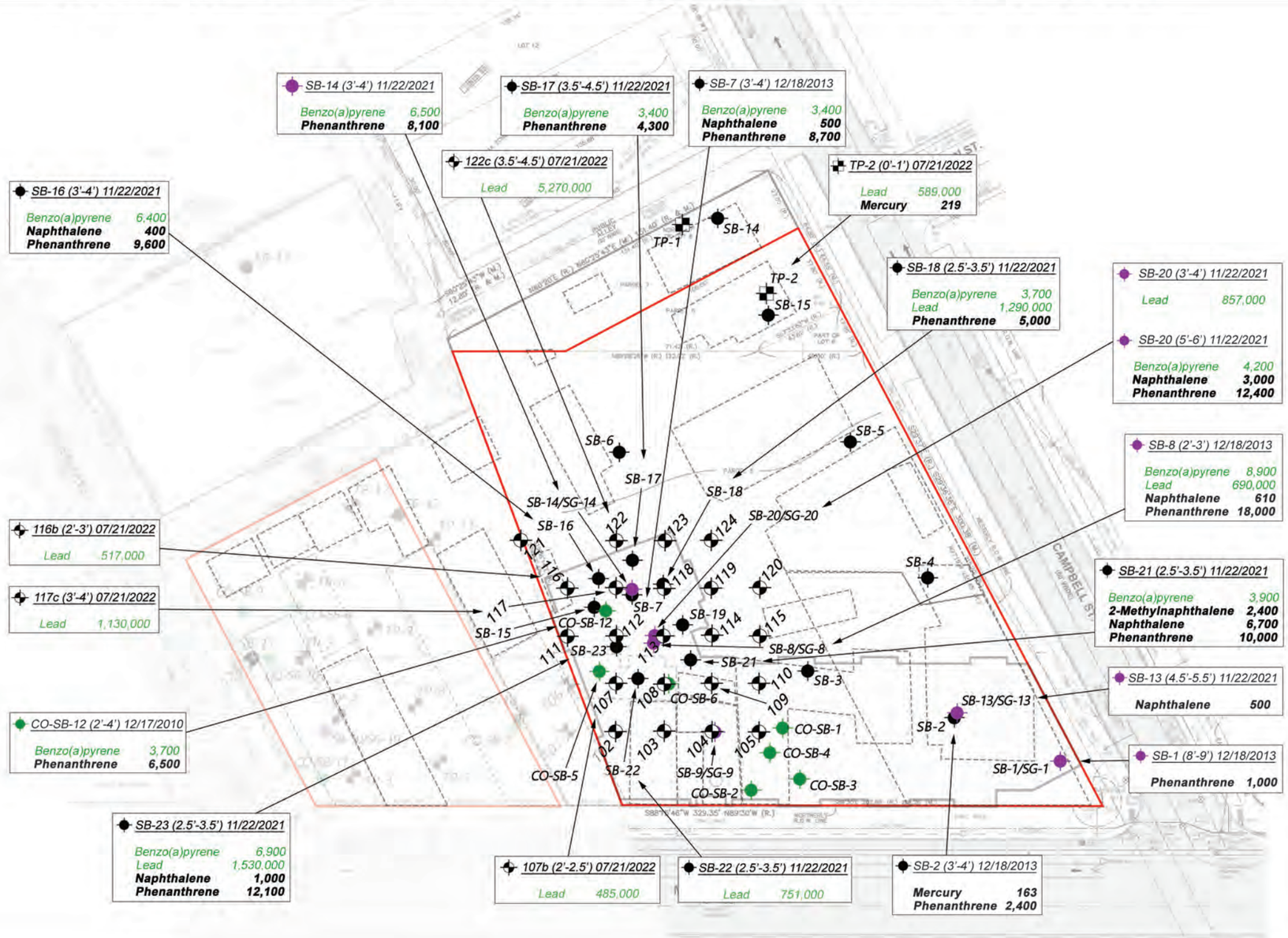
Figure 5

Soil Sample Exceedance Map

McDowell & Associates

Job Number: 22-16296

Figure 5A - Soil Exceedance Map - Relevant Criteria (East Portion)



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY

BOLD - > SSVIAC (UNRESTRICTED SITE SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA)

GREEN - > DC (DIRECT CONTACT)

---- FORMER STRUCTURE

NOTES:

- ALL VALUES EXPRESSED IN ug/kg
- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

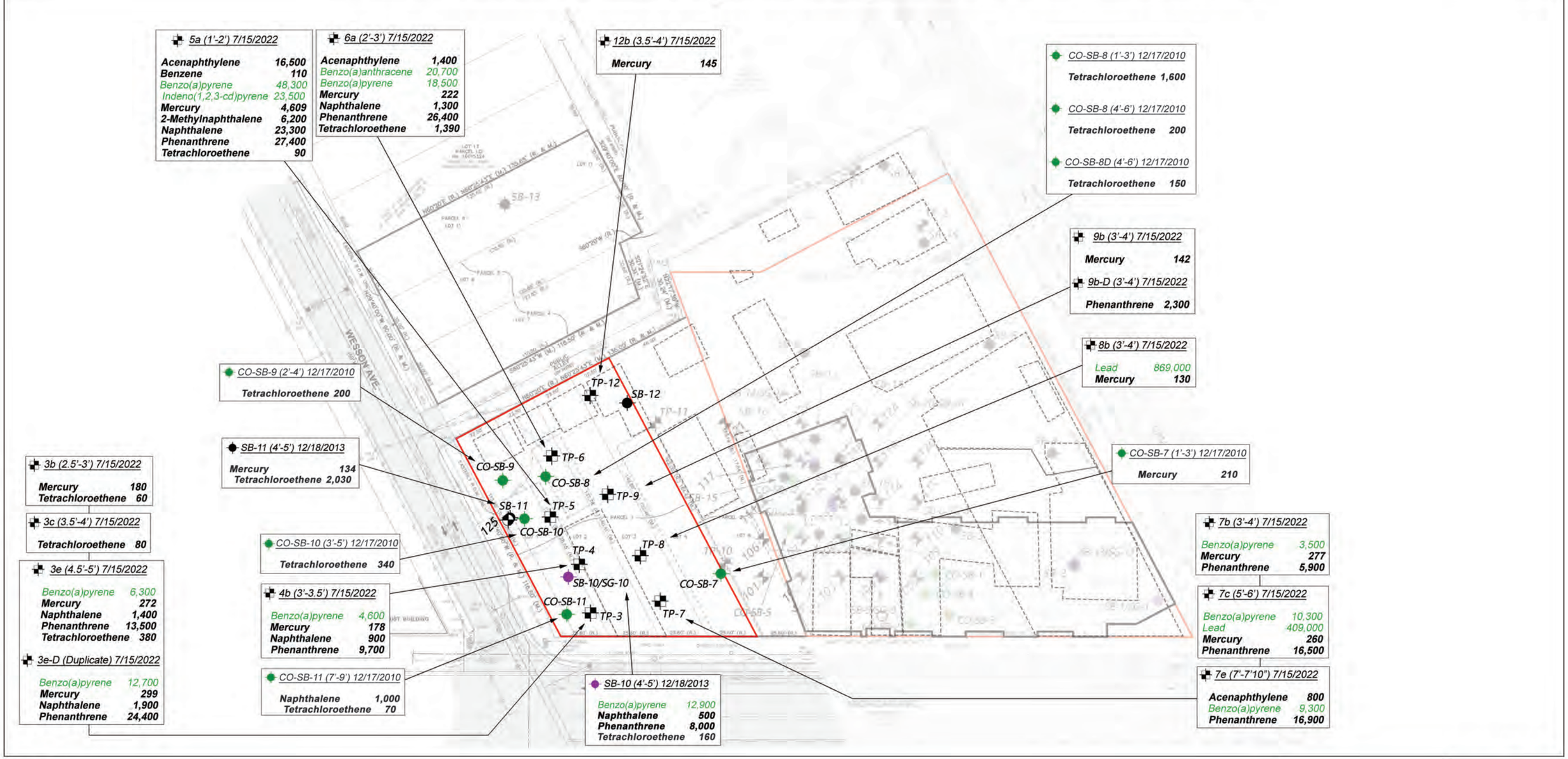
1" = 50'

0 50'

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 5B - SOIL EXCEEDANCE MAP - RELEVANT CRITERIA (WEST PORTION)



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY

BOLD - > SSVIAC (UNRESTRICTED SITE SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA)

GREEN - > DC (DIRECT CONTACT)

---- FORMER STRUCTURES

NOTES:

- ALL VALUES EXPRESSED IN ug/kg
- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

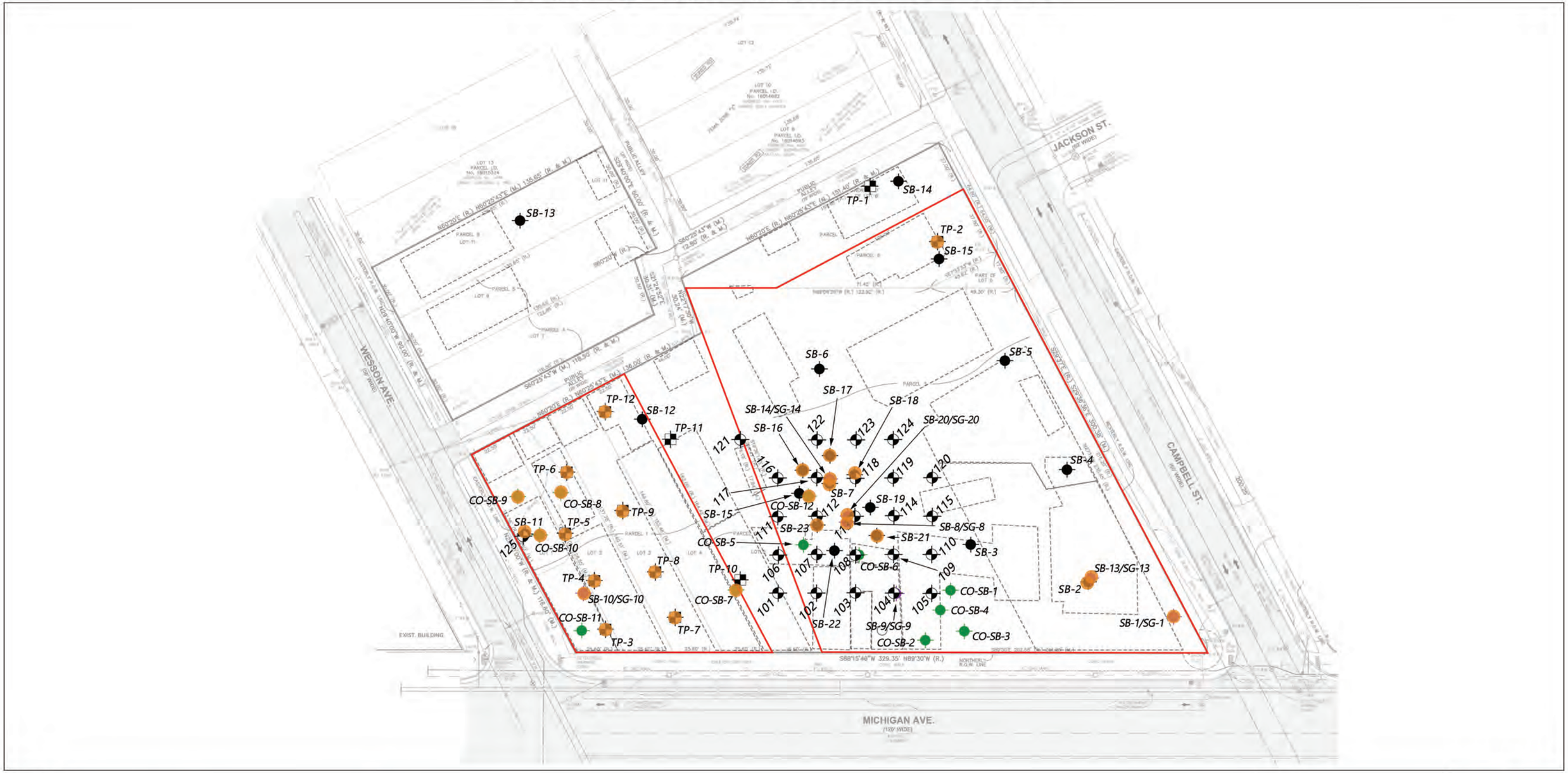
1" = 50'

0 50'

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 5C - SOIL EXCEEDANCE MAP - SVIAC



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY
- EXCEEDS SVIAC
- ---- FORMER STRUCTURES

NOTES:

- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

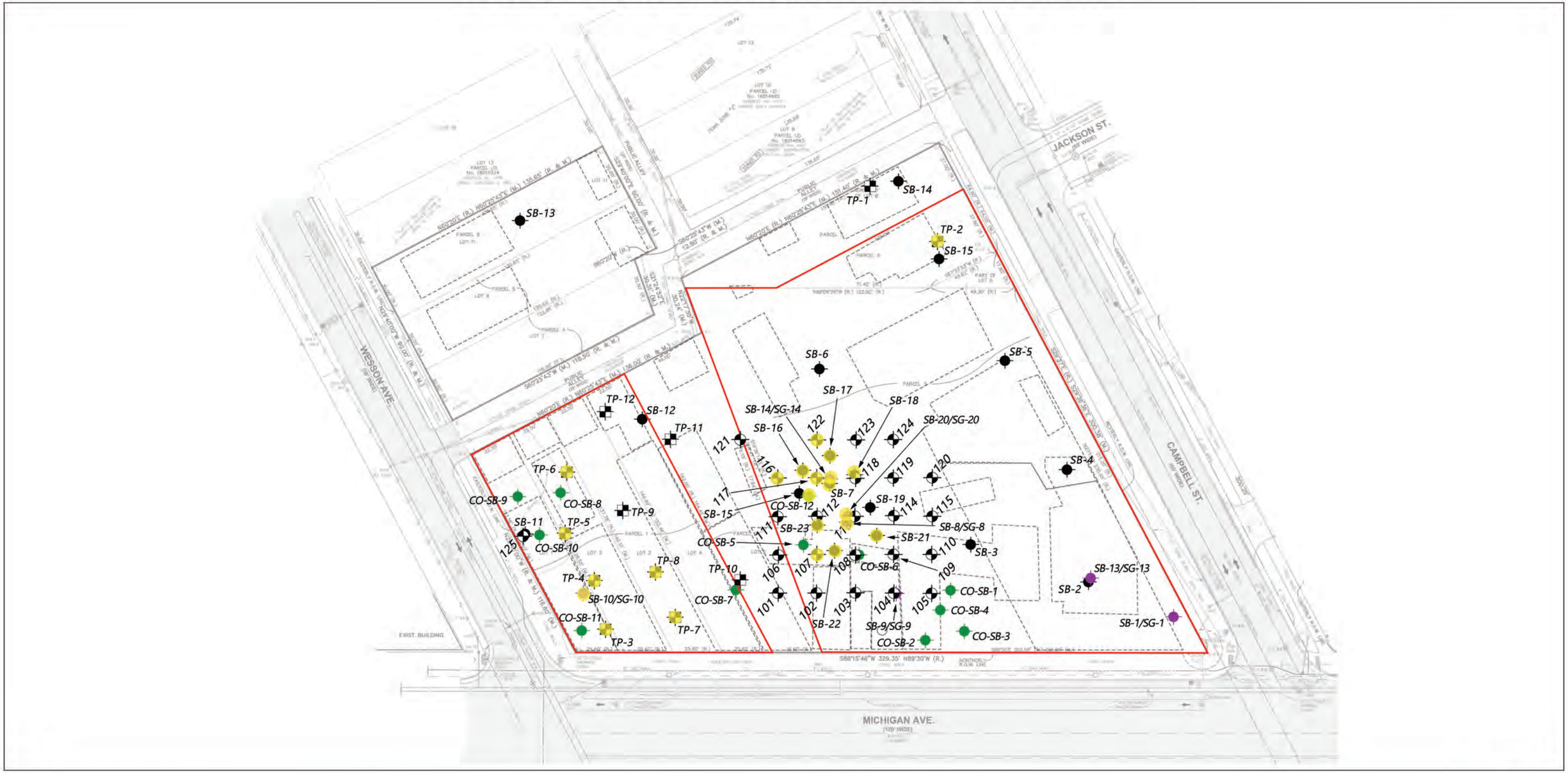
1" = 50'

0 50'

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 5D - SOIL EXCEEDANCE MAP - DIRECT CONTACT



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY
- EXCEEDS DIRECT CONTACT
- ---- FORMER STRUCTURES

NOTES:

- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

1" = 50'

0 50'

Figure 6

Proposed Soil Excavation Map

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 6 - PROPOSED SOIL REMOVAL MAP

LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE SUBJECT PROPERTY BOUNDARY
- PROPOSED FILL SOIL REMOVAL

NOTES:

- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE

N

1" = 50'

0 50'

Figure 7

Proposed VSR Sample Location Map

McDowell & Associates

JOB NUMBER: 22-16296

FIGURE 7 - PROPOSED VSR SAMPLE LOCATIONS

LEGEND

- *TEST PIT (M & A 2022)*
- *SOIL BORING (M & A 2022)*
- *SOIL BORING (PME 2014/2021)*
- *SOIL BORING/SOIL GAS (PME 2014)*
- *SOIL BORING (AKT 2011)*
- *APPROXIMATE SUBJECT PROPERTY BOUNDARY*
- *PROPOSED FILL SOIL REMOVAL*
- *EXPOSURE UNIT (9 SAMPLES EACH USING SYSTEMATIC RANDOM SAMPLING)*

NOTES:

- *ADDITIONAL BIASED SAMPLES WILL BE OBTAINED FROM SOIL CONSIDERED MOST LIKELY TO EXCEED CLEANUP CRITERIA.*
- *EXCAVATION SIDEWALL SAMPLING IS NOT PLANNED AS SIDEWALLS WILL BE OFF-SITE.*
- *BASE MAP BY RJD SURVEYORS*
- *ALL LOCATIONS APPROXIMATE*

Table 1

Summary of Metals Chemistry Results (Soil)

McDowell Job No. 22-16296
JL 10/14/2022

TABLE 1 - SUMMARY OF METALS CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Depth	Arsenic 7440382	Barium 7440393	Cadmium 7440439	Total Chromium 18540299	Copper 7440508
CO-SB-1	12/17/2010	AKT	4-6'	NT	NT	210	2,310	NT
CO-SB-1	12/17/2010	AKT	10-12'	NT	NT	<200	3,260	NT
CO-SB-2	12/17/2010	AKT	4-6'	NT	NT	<200	3,030	NT
CO-SB-2	12/17/2010	AKT	10-12'	NT	NT	<200	3,860	NT
CO-SB-3	12/17/2010	AKT	1-3'	NT	NT	340	3,450	NT
CO-SB-3	12/17/2010	AKT	4-6'	NT	NT	<200	2,730	NT
CO-SB-4	12/17/2010	AKT	2-4'	NT	NT	420	3,570	NT
CO-SB-5	12/17/2010	AKT	2-4'	1,240	53,800	210	2,790	8,100
CO-SB-7	12/17/2010	AKT	1-3'	2,480	52,500	320	4,390	18,500
CO-SB-7	12/17/2010	AKT	4-6'	3,060	50,200	330	1,780	15,400
SB-1	12/18/2013	PM	1-2'	2,820	58,400	520	8,710	16,400
SB-2	12/18/2013	PM	3-4'	1,950	55,400	390	4,890	20,300
SB-3	12/18/2013	PM	4-5'	1,410	**81,200**	290	2,710	12,100
SB-8	12/18/2013	PM	2-3'	2,880	**83,100**	550	1,750	**61,200**
SB-10	12/18/2013	PM	4-5'	2,440	71,500	340	3,780	8,500
SB-11	12/18/2013	PM	4-5'	2,430	39,600	410	6,070	15,800
SB-14	12/19/2013	PM	2.5-3.5'	850	69,800	<200	3,150	6,200
SB-15	12/19/2013	PM	5-6'	1,620	**88,600**	220	2,840	7,500
EGLE Statewide Default Background Levels				**5,800**	**75,000**	**1,200**	**18,000**	**32,000**
EGLE Generic Residential Ambient Volatile Soil Inhalation Criteria (0.77 Modifier)				**NLV**	**NLV**	**NLV**	**NLV**	**NLV**
EGLE Generic Residential Particulate Soil Inhalation Criteria (0.77 Modifier)				**554,400**	**254,100,000**	**1,309,000**	**200,200**	**100,100,000**
EGLE Generic Residential Direct Contact Criteria				**7,600**	**37,000,000**	**550,000**	**2,500,000**	**20,000,000**

Sample	Date	Source	Depth	Total Lead 7439921	Mercury 7439976	Selenium 7782492	Silver 7440224	Zinc 7440666
CO-SB-1	12/17/2010	AKT	4-6'	12,900	NT	NT	NT	NT
CO-SB-1	12/17/2010	AKT	10-12'	4,850	NT	NT	NT	NT
CO-SB-2	12/17/2010	AKT	4-6'	8,750	NT	NT	NT	NT
CO-SB-2	12/17/2010	AKT	10-12'	5,430	NT	NT	NT	NT
CO-SB-3	12/17/2010	AKT	1-3'	2,740	NT	NT	NT	NT
CO-SB-3	12/17/2010	AKT	4-6'	6,280	NT	NT	NT	NT
CO-SB-4	12/17/2010	AKT	2-4'	1,210	NT	NT	NT	NT
CO-SB-5	12/17/2010	AKT	2-4'	1,590	<50	<500	<200	24,100
CO-SB-7	12/17/2010	AKT	1-3'	7,170	**210**	<500	<200	**61,000**
CO-SB-7	12/17/2010	AKT	4-6'	4,620	<50	<500	<200	**55,000**
SB-1	12/18/2013	PM	1-2'	3,140	73	<400	<200	**50,600**
SB-2	12/18/2013	PM	3-4'	5,350	**163**	<400	<200	**59,000**
SB-3	12/18/2013	PM	4-5'	1,350	<50	<400	<200	47,900
SB-8	12/18/2013	PM	2-3'	**690,000**	111	<400	<200	**217,000**
SB-10	12/18/2013	PM	4-5'	**51,900**	115	<400	<200	**61,500**
SB-11	12/18/2013	PM	4-5'	**69,800**	**134**	<400	<200	**58,800**
SB-14	12/19/2013	PM	2.5-3.5'	7,120	<50	<400	<200	20,900
SB-15	12/19/2013	PM	5-6'	9,650	<50	<400	<200	15,300
SB-13	11/22/2021	PM	3-4'	**36,500**	NT	NT	NT	NT
SB-13	11/22/2021	PM	4.5-5.5'	14,400	NT	NT	NT	NT
SB-14	11/22/2021	PM	3-4'	**187,000**	NT	NT	NT	NT
SB-14	11/22/2021	PM	5-6'	7,580	NT	NT	NT	NT
SB-15	11/22/2021	PM	2.5-3.5'	**26,700**	NT	NT	NT	NT
SB-15	11/22/2021	PM	5-6'	8,270	NT	NT	NT	NT
SB-16	11/22/2021	PM	3-4'	**61,200**	NT	NT	NT	NT
SB-16	11/22/2021	PM	5-6'	12,200	NT	NT	NT	NT
SB-17	11/22/2021	PM	3.5-4.5'	**47,200**	NT	NT	NT	NT
SB-17	11/22/2021	PM	5-6'	17,600	NT	NT	NT	NT
SB-18	11/22/2021	PM	2.5-3.5'	**1,290,000**	NT	NT	NT	NT
SB-18	11/22/2021	PM	5-6'	13,700	NT	NT	NT	NT
SB-19	11/22/2021	PM	3-4'	**47,400**	NT	NT	NT	NT
SB-19	11/22/2021	PM	5-6'	11,900	NT	NT	NT	NT
SB-20	11/22/2021	PM	3-4'	**857,000**	NT	NT	NT	NT
SB-20	11/22/2021	PM	5-6'	**375,000**	NT	NT	NT	NT
SB-21	11/22/2021	PM	2.5-3.5'	**214,000**	NT	NT	NT	NT
SB-21	11/22/2021	PM	5-6'	10,000	NT	NT	NT	NT
SB-22	11/22/2021	PM	2.5-3.5'	**751,000**	NT	NT	NT	NT
SB-22	11/22/2021	PM	5-6'	10,500	NT	NT	NT	NT
SB-23	11/22/2021	PM	2.4-3.5'	**1,530,000**	NT	NT	NT	NT
SB-23	11/22/2021	PM	5-6'	20,700	NT	NT	NT	NT
1a	7/15/2022	McDowell	0'- 1'	13,900	<50	NT	NT	NT
2a	7/15/2022	McDowell	0'- 1'	**589,000**	**219**	NT	NT	NT
2b	7/15/2022	McDowell	2'- 3'	14,300	<50	NT	NT	NT
3b	7/15/2022	McDowell	2'6"- 3'	**93,400**	**180**	NT	NT	NT
3c	7/15/2022	McDowell	3'6"-- 4'	**96,500**	120	NT	NT	NT
3e	7/15/2022	McDowell	4'6"- 5'	**54,200**	**272**	NT	NT	NT
3e-D	7/15/2022	McDowell	duplicate	**333,000**	**299**	NT	NT	NT
4b	7/15/2022	McDowell	3'- 3'6"	**194,000**	**178**	NT	NT	NT
5a	7/15/2022	McDowell	1'- 2'	**181,000**	**4,609**	NT	NT	NT
5b	7/15/2022	McDowell	3'- 4'	11,100	73	NT	NT	NT
6a	7/15/2022	McDowell	2'- 3'	**238,000**	**222**	NT	NT	NT
6b	7/15/2022	McDowell	3'6"- 4'6"	**85,900**	<50	NT	NT	NT
7b	7/15/2022	McDowell	3'- 4'	**339,000**	**277**	NT	NT	NT
7c	7/15/2022	McDowell	5'- 6'	**409,000**	**260**	NT	NT	NT
7e	7/15/2022	McDowell	7'- 7'10"	**184,000**	108	NT	NT	NT
8b	7/15/2022	McDowell	3'- 4'	**869,000**	**130**	NT	NT	NT
9b	7/15/2022	McDowell	3'- 4'	**74,200**	**142**	NT	NT	NT
9b-D	7/15/2022	McDowell	duplicate	**48,300**	102	NT	NT	NT
9c	7/15/2022	McDowell	5'8"- 6'	10,600	52	NT	NT	NT
10a	7/15/2022	McDowell	0'- 1'	**104,000**	90	NT	NT	NT
10b	7/15/2022	McDowell	3'- 4'	**207,000**	94	NT	NT	NT
11a	7/15/2022	McDowell	6"- 1'6"	16,600	<50	NT	NT	NT
11a-D	7/15/2022	McDowell	duplicate	**50,900**	<50	NT	NT	NT
11b	7/15/2022	McDowell	2'- 3'	**22,400**	<50	NT	NT	NT
12b	7/15/2022	McDowell	3'6"- 4'	**130,000**	**145**	NT	NT	NT
12c	7/15/2022	McDowell	5'- 6'	**310,000**	121	NT	NT	NT
102a	7/21/2022	McDowell	1'- 2'	2,200	NT	NT	NT	NT
102b	7/21/2022	McDowell	2'- 2'6"	**355,000**	NT	NT	NT	NT
104a	7/21/2022	McDowell	1'- 2'	2,880	NT	NT	NT	NT
104b	7/21/2022	McDowell	2'- 3'	**233,000**	NT	NT	NT	NT
107a	7/21/2022	McDowell	0'- 1'	2,830	NT	NT	NT	NT
107b	7/21/2022	McDowell	2'- 2'6"	**485,000**	NT	NT	NT	NT
107c	7/21/2022	McDowell	3'- 3'6"	**263,000**	NT	NT	NT	NT
108a	7/21/2022	McDowell	1'- 2'	3,030	NT	NT	NT	NT
108b	7/21/2022	McDowell	3'- 3'6"	**369,000**	NT	NT	NT	NT
111c	7/21/2022	McDowell	2'- 3'	**145,000**	NT	NT	NT	NT
112a	7/21/2022	McDowell	1'- 2'	4,120	NT	NT	NT	NT
113a	7/21/2022	McDowell	1'- 2'	2,810	NT	NT	NT	NT
114c	7/21/2022	McDowell	2'- 3'	**151,000**	NT	NT	NT	NT
116b	7/21/2022	McDowell	2'- 3'	**517,000**	NT	NT	NT	NT
116c	7/21/2022	McDowell	3'6"- 4'	12,300	NT	NT	NT	NT
117b	7/21/2022	McDowell	1'- 2'	2,780	NT	NT	NT	NT
117c	7/21/2022	McDowell	3'- 4'	**1,130,000**	NT	NT	NT	NT
117d	7/21/2022	McDowell	4'6"- 5'6"	12,400	NT	NT	NT	NT
118d	7/21/2022	McDowell	6'- 7'	**138,000**	NT	NT	NT	NT
119c	7/21/2022	McDowell	4'- 5'	**279,000**	NT	NT	NT	NT
122c	7/21/2022	McDowell	3'6"- 4'6"	**5,270,000**	NT	NT	NT	NT
123c	7/21/2022	McDowell	3'6"- 4'6"	**164,000**	NT	NT	NT	NT
124c	7/21/2022	McDowell	3'6"- 4'6"	**194,000**	NT	NT	NT	NT
EGLE Statewide Default Background Levels				**21,000**	**130**	**410**	**1,000**	**47,000**
EGLE Residential Volatilizataion to Indoor Air Pathway (VIAP) Screening Level					**22**			
EGLE Generic Residential Ambient Volatile Soil Inhalation Criteria (0.77 Modifier)				**NLV**	**40,040**	**NLV**	**NLV**	**NLV**
EGLE Generic Residential Particulate Soil Inhalation Criteria (0.77 Modifier)				**77,000,000**	**40,040**	**100,100,000**	**5,159,000**	**ID**
EGLE Generic Residential Direct Contact Criteria				**400,000**	**160,000**	**2,600,000**	**2,500,000**	**170,000,000**

NOTES:

1. All values expressed in ug/kg
2. Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Criteria from Table 2. Soil: Residential, and Table 3. Soil: Nonresidential. Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels," dated December 30, 2013.
   EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels, dated September 4, 2020.
3. Most rigorous of Ambient Air Criteria presented.
4. Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
5. "ID" = EGLE indicates inadequate data to develop criterion.
6. "NLV" = EGLE indicates not likely to volatilize.
7. Boldface values exceed EGLE Statewide Default Background Levels.
8. Values shown thus [ ] exceed Statewide Default and EGLE Residential VIAP Screening Levels.
9. Values shown thus [ ] exceed Statewide Default and EGLE Generic Residential Direct Contact Criteria.

Table 2

Summary of PNAs Chemistry Results (Soil)

TABLE 2 - SUMMARY OF PNAs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Acenaphthene 83329	Acenaphthylene 208968	Anthracene 120127	Benzo(a)anthracene 56553	Benzo(a)pyrene 50328	Benzo(b)fluoranthene 205992
CO-SB-1	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-1	12/17/2010	AKT	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT	1-3'	<300	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-4	12/17/2010	AKT	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-6	12/17/2010	AKT	2-4'	<300	<300	<300	800	800	600
CO-SB-6	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-7	12/17/2010	AKT	1-3'	<300	<300	<300	400	300	<300
CO-SB-7	12/17/2010	AKT	4-6'	<300	<300	<300	500	400	400
CO-SB-8	12/17/2010	AKT	1-3'	<300	<300	<300	400	500	400
CO-SB-8	12/17/2010	AKT	4-6'	<300	<300	400	1,000	1,100	900
CO-SB-8 DUP	12/17/2010	AKT	4-6'	<300	<300	<300	400	400	400
CO-SB-12	12/17/2010	AKT	2-4'	500	400	1,600	4,200	3,700	3,700
SB-1	12/18/2013	PME	1-2'	<300	<300	<300	700	600	1,110
SB-1	12/18/2013	PME	8-9'	<300	<300	<300	900	1,000	1,800
SB-2	12/18/2013	PME	3-4'	<300	<300	500	1,200	1,100	1,800
SB-3	12/18/2013	PME	4-5'	<300	<300	<300	<300	<300	<300
SB-4	12/18/2013	PME	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-5	12/18/2013	PME	1-2'	<300	<300	<300	<300	300	500
SB-6	12/18/2013	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-7	12/18/2013	PME	3-4'	900	<300	1,900	3,500	3,400	6,100
SB-8	12/18/2013	PME	2-3'	2,200	400	3,900	9,300	8,900	15,800
SB-9	12/18/2013	PME	2-3'	<300	<300	<300	<300	<300	<300
SB-10	12/18/2013	PME	4-5'	<300	<300	<300	<300	2,900	4,900
SB-10	12/18/2013	PME	8-9'	<300	<300	<300	<300	<300	<300
SB-11	12/18/2013	PME	4-5'	<300	<300	<300	<300	700	1,100
SB-11	12/18/2013	PME	9-10'	<300	<300	<300	<300	<300	<300
SB-14	12/19/2013	PME	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-15	12/19/2013	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-13	11/22/2021	PME	3-4'	<300	<300	400	800	600	1,100
SB-13	11/22/2021	PME	4.5-5.5'	<300	<300	<300	<300	<300	<300
SB-14	11/22/2021	PME	3-4'	700	400	2,000	6,400	6,500	11,900
SB-14	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-15	11/22/2021	PME	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-15	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-16	11/22/2021	PME	3-4'	800	400	2,600	7,600	6,400	12,300
SB-16	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-17	11/22/2021	PME	3.5-4.5'	400	<300	1,200	3,500	3,400	<300
SB-17	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	6,000
SB-18	11/22/2021	PME	2.5-3.5'	400	<300	1,200	3,900	3,700	<300
SB-18	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	6,600
SB-19	11/22/2021	PME	3-4'	<300	<300	<300	<300	<300	400
SB-19	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	500
SB-20	11/22/2021	PME	3-4'	<300	<300	400	1,100	1,000	<300
SB-20	11/22/2021	PME	5-6'	1,800	<300	2,600	4,500	4,200	1,900
SB-21	11/22/2021	PME	2.5-3.5'	800	<300	2,700	4,400	3,900	7,200
SB-21	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	7,400
SB-22	11/22/2021	PME	2.5-3.5'	<300	<300	<300	900	900	<300
SB-22	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	1,800
SB-23	11/22/2021	PME	2.4-3.5'	1,100	<300	2,600	7,100	6,900	<300
SB-23	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	13,400
1a	7/15/2022	McDowell	0'- 1'	<300	<300	<300	<300	<300	<300
2a	7/15/2022	McDowell	0'- 1'	<300	<300	<300	800	800	1,300
2b	7/15/2022	McDowell	2'- 3'	<300	<300	<300	<300	<300	<300
3b	7/15/2022	McDowell	2'6"- 3'	<300	<300	300	900	900	1,700
3c	7/15/2022	McDowell	3'6"-- 4'	<300	<300	<300	700	700	1,200
3e	7/15/2022	McDowell	4'6"- 5'	1,500	<300	4,000	6,600	6,300	11,000
3e-D	7/15/2022	McDowell	duplicate	2,100	800	7,400	12,700	12,700	21,600
4b	7/15/2022	McDowell	3'- 3'6"	1,000	300	2,500	4,800	4,600	8,800
5a	7/15/2022	McDowell	1'- 2'	<800	16,500	23,800	41,400	48,300	97,000
5b	7/15/2022	McDowell	3'- 4'	<300	<300	<300	<300	<300	<300
6a	7/15/2022	McDowell	2'- 3'	2,000	1,400	10,100	20,700	18,500	32,200
6b	7/15/2022	McDowell	3'6"- 4'6"	<300	<300	400	1,000	1,000	1,500
7b	7/15/2022	McDowell	3'- 4'	400	<300	1,800	3,900	3,500	6,000
7c	7/15/2022	McDowell	5'- 6'	1,100	300	4,400	10,400	10,300	20,400
7e	7/15/2022	McDowell	7'- 7'10"	1,100	800	5,200	9,900	9,300	15,300
8b	7/15/2022	McDowell	3'- 4'	<300	<300	300	700	700	1,100
9b	7/15/2022	McDowell	3'- 4'	<300	<300	<300	600	500	900
9b-D	7/15/2022	McDowell	duplicate	<300	<300	700	1,200	1,100	1,900
9c	7/15/2022	McDowell	5'8"- 6'	<300	<300	<300	<300	<300	<300
10b	7/15/2022	McDowell	3'- 4'	<300	<300	<300	700	700	1,100
11b	7/15/2022	McDowell	2'- 3'	<300	<300	<300	<300	<300	<300
12b	7/15/2022	McDowell	3'6"- 4'	<300	<300	<300	400	300	700
12c	7/15/2022	McDowell	5'- 6'	<300	<300	<300	500	500	900
103d	7/21/2022	McDowell	5'- 6'	<300	<300	<300	<300	<300	<300
Unrestricted Site Specific Volatilization to Indoor Air Criteria				**200,000**	**DATA**	**13,000,000**	**160,000**	**NA**	**NA**
EGLE Generic Residential Particulate Inhalation Criteria (0.77 Modifier)				**10,780,000,000**	**1,771,000,000**	**51,590,000,000**	**ID**	**1,155,000**	**ID**
EGLE Generic Residential Ambient Volatile Air Inhalation Criteria (0.77 Modifier)				**62,370,000**	**1,694,000**	**1,078,000,000**	**NLV**	**NLV**	**ID**
EGLE Generic Residential Direct Contact Criteria				**41,000,000**	**1,600,000**	**230,000,000**	**20,000**	**2,000**	**20,000**

TABLE 2 - SUMMARY OF PNAs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Benzo(g,h,i)perylene 191242	Benzo(k)fluoranthene 207089	Chrysene 218019	Dibenzo(a,h)anthracene 53703	Fluoranthene 206440	Fluorene 86737
CO-SB-1	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-1	12/17/2010	AKT	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT	1-3'	<300	<300	<300	<300	500	<300
CO-SB-3	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-4	12/17/2010	AKT	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-6	12/17/2010	AKT	2-4'	<300	800	900	<300	1,500	<300
CO-SB-6	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-7	12/17/2010	AKT	1-3'	<300	300	400	<300	600	<300
CO-SB-7	12/17/2010	AKT	4-6'	<300	300	500	<300	1,00	<300
CO-SB-8	12/17/2010	AKT	1-3'	500	400	600	<300	700	<300
CO-SB-8	12/17/2010	AKT	4-6'	700	800	1,300	<300	2,000	<300
CO-SB-8 DUP	12/17/2010	AKT	4-6'	<300	<300	500	<300	700	<300
CO-SB-12	12/17/2010	AKT	2-4'	1,000	3,600	4,200	<300	8,600	700
SB-1	12/18/2013	PME	1-2'	300	1,200	700	<300	1,400	<300
SB-1	12/18/2013	PME	8-9'	400	2,000	1,000	<300	1,700	<300
SB-2	12/18/2013	PME	3-4'	600	2,000	1,200	<300	3,200	<300
SB-3	12/18/2013	PME	4-5'	<300	<300	<300	<300	<300	<300
SB-4	12/18/2013	PME	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-5	12/18/2013	PME	1-2'	<300	600	<300	<300	500	<300
SB-6	12/18/2013	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-7	12/18/2013	PME	3-4'	1,100	6,800	3,500	400	8,800	1,000
SB-8	12/18/2013	PME	2-3'	2,900	17,600	9,300	<300	20,900	2,600
SB-9	12/18/2013	PME	2-3'	<300	<300	<300	<300	<300	<300
SB-10	12/18/2013	PME	4-5'	1,600	5,400	3,700	600	8,800	700
SB-10	12/18/2013	PME	8-9'	<300	<300	<300	<300	<300	<300
SB-11	12/18/2013	PME	4-5'	400	1,300	800	<300	1,700	<300
SB-11	12/18/2013	PME	9-10'	<300	<300	<300	<300	<300	<300
SB-14	12/19/2013	PME	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-15	12/19/2013	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-13	11/22/2021	PME	3-4'	<300	1,300	800	<300	1,900	<300
SB-13	11/22/2021	PME	4.5-5.5'	<300	<300	<300	<300	<300	<300
SB-14	11/22/2021	PME	3-4'	2,500	13,400	6,800	300	13,000	700
SB-14	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-15	11/22/2021	PME	2.5-3.5'	<300	300	<300	<300	400	<300
SB-15	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-16	11/22/2021	PME	3-4'	2,000	13,800	7,300	<300	14,600	900
SB-16	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-17	11/22/2021	PME	3.5-4.5'	1,200	6,700	3,500	<300	7,400	500
SB-17	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-18	11/22/2021	PME	2.5-3.5'	1,500	7,400	4,100	<300	8,300	400
SB-18	11/22/2021	PME	5-6'	<300	400	<300	<300	600	<300
SB-19	11/22/2021	PME	3-4'	<300	600	<300	<300	500	<300
SB-19	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-20	11/22/2021	PME	3-4'	400	2,100	1,100	<300	2,200	<300
SB-20	11/22/2021	PME	5-6'	2,000	8,200	4,700	<300	10,500	2,100
SB-21	11/22/2021	PME	2.5-3.5'	1,100	8,200	4,400	<300	10,000	1,100
SB-21	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-22	11/22/2021	PME	2.5-3.5'	500	2,100	1,100	<300	1,800	<300
SB-22	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
SB-23	11/22/2021	PME	2.4-3.5'	2,100	15,100	7,200	300	14,200	1,400
SB-23	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300	<300
1a	7/15/2022	McDowell	0'- 1'	<300	<300	<300	<300	<300	<300
2a	7/15/2022	McDowell	0'- 1'	400	1500	800	<300	1,800	<300
2b	7/15/2022	McDowell	2'- 3'	<300	<300	<300	<300	<300	<300
3b	7/15/2022	McDowell	2'6"- 3'	500	1,900	1,000	<300	1,600	<300
3c	7/15/2022	McDowell	3'6"-- 4'	300	1,400	700	<300	1,100	<300
3e	7/15/2022	McDowell	4'6"- 5'	2,200	12,700	6,300	<300	16,100	1,500
3e-D	7/15/2022	McDowell	duplicate	4,300	24,900	12,100	300	30,400	2,900
4b	7/15/2022	McDowell	3'- 3'6"	1,400	10,200	4,900	<300	12,100	1,000
5a	7/15/2022	McDowell	1'- 2'	22,800	111,700	69,700	1,900	53,700	4,100
5b	7/15/2022	McDowell	3'- 4'	<300	<300	<300	<300	<300	<300
6a	7/15/2022	McDowell	2'- 3'	4,500	37,100	18,000	600	44,400	2,100
6b	7/15/2022	McDowell	3'6"- 4'6"	500	1,700	900	<300	2,500	<300
7b	7/15/2022	McDowell	3'- 4'	1,500	6,900	3,700	<300	9,000	400
7c	7/15/2022	McDowell	5'- 6'	3,100	23,500	10,300	<300	25,100	1,200
7e	7/15/2022	McDowell	7'- 7'10"	3,300	17,600	9,000	<300	23,800	1,500
8b	7/15/2022	McDowell	3'- 4'	400	1,300	700	<300	1,900	<300
9b	7/15/2022	McDowell	3'- 4'	<300	1,000	500	<300	1,200	<300
9b-D	7/15/2022	McDowell	duplicate	500	2,200	1,200	<300	2,800	<300
9c	7/15/2022	McDowell	5'8"- 6'	<300	<300	<300	<300	<300	<300
10b	7/15/2022	McDowell	3'- 4'	300	1,300	700	<300	1,500	<300
11b	7/15/2022	McDowell	2'- 3'	<300	<300	<300	<300	<300	<300
12b	7/15/2022	McDowell	3'6"- 4'	<300	800	300	<300	700	<300
12c	7/15/2022	McDowell	5'- 6'	<300	1,000	500	<300	1,100	<300
103d	7/21/2022	McDowell	5'- 6'	<300	<300	<300	<300	<300	<300
Unrestricted Site Specific Volatilization to Indoor Air Criteria				**NA**	**NA**	**NA**	**NA**	**NA**	**470,000**
EGLE Generic Residential Particulate Inhalation Criteria (0.77 Modifier)				**616,000,000**	**ID**	**ID**	**ID**	**7,161,000,000**	**7,161,000,000**
EGLE Generic Residential Ambient Volatile Air Inhalation Criteria (0.77 Modifier)				**NLV**	**NLV**	**ID**	**NLV**	**569,800,000**	**100,100,000**
EGLE Generic Residential Direct Contact Criteria				**2,500,000**	**200,000**	**2,000,000**	**2,000**	**46,000,000**	**27,000,000**

TABLE 2 - SUMMARY OF PNAs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Indeno(1,2,3-cd)pyrene 193395	2-Methylnaphthalene 91576	Naphthalene 91203	Phenanthrene 85018	Pyrene 129000
CO-SB-1	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300
CO-SB-1	12/17/2010	AKT	10-12'	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT	10-12'	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT	1-3'	<300	<300	<300	<300	400
CO-SB-3	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300
CO-SB-4	12/17/2010	AKT	2-4'	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT	2-4'	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300
CO-SB-6	12/17/2010	AKT	2-4'	<300	<300	<300	800	1,600
CO-SB-6	12/17/2010	AKT	4-6'	<300	<300	<300	<300	<300
CO-SB-7	12/17/2010	AKT	1-3'	<300	<300	<300	<300	500
CO-SB-7	12/17/2010	AKT	4-6'	<300	<300	<300	600	800
CO-SB-8	12/17/2010	AKT	1-3'	400	<300	<300	500	600
CO-SB-8	12/17/2010	AKT	4-6'	700	<300	<300	1,500	1,700
CO-SB-8 DUP	12/17/2010	AKT	4-6'	<300	<300	<300	400	600
CO-SB-12	12/17/2010	AKT	2-4'	1,000	<300	<300	6,500	8,000
SB-1	12/18/2013	PME	1-2'	<300	<300	<300	700	1,200
SB-1	12/18/2013	PME	8-9'	400	<300	<300	1,000	1,700
SB-2	12/18/2013	PME	3-4'	500	<300	<300	2,400	2,800
SB-3	12/18/2013	PME	4-5'	<300	<300	<300	<300	<300
SB-4	12/18/2013	PME	2.5-3.5'	<300	<300	<300	<300	<300
SB-5	12/18/2013	PME	1-2'	<300	<300	<300	<300	500
SB-6	12/18/2013	PME	5-6'	<300	<300	<300	<300	<300
SB-7	12/18/2013	PME	3-4'	1,000	<300	500	8,700	9,400
SB-8	12/18/2013	PME	2-3'	2,900	1,100	300	18,000	18,500
SB-9	12/18/2013	PME	2-3'	<300	<300	<300	<300	<300
SB-10	12/18/2013	PME	4-5'	1,400	<300	500	8,000	6,900
SB-10	12/18/2013	PME	8-9'	<300	<300	<300	<300	<300
SB-11	12/18/2013	PME	4-5'	300	<300	<300	1,000	1,500
SB-11	12/18/2013	PME	9-10'	<300	<300	<300	<300	<300
SB-14	12/19/2013	PME	2.5-3.5'	<300	<300	<300	<300	<300
SB-15	12/19/2013	PME	5-6'	<300	<300	<300	<300	<300
SB-13	11/22/2021	PME	3-4'	<300	<300	<300	1,600	1,800
SB-13	11/22/2021	PME	4.5-5.5'	<300	<300	<300	<300	<300
SB-14	11/22/2021	PME	3-4'	2,500	<300	<300	8,100	13,500
SB-14	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-15	11/22/2021	PME	2.5-3.5'	<300	<300	<300	400	400
SB-15	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-16	11/22/2021	PME	3-4'	2,000	<300	400	9,600	18,000
SB-16	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-17	11/22/2021	PME	3.5-4.5'	1,200	<300	<300	4,300	7,500
SB-17	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-18	11/22/2021	PME	2.5-3.5'	1,400	<300	<300	5,000	8,800
SB-18	11/22/2021	PME	5-6'	<300	<300	<300	700	600
SB-19	11/22/2021	PME	3-4'	<300	<300	<300	<300	600
SB-19	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-20	11/22/2021	PME	3-4'	300	<300	<300	1,400	2,200
SB-20	11/22/2021	PME	5-6'	1,900	1,000	3,000	12,400	9,800
SB-21	11/22/2021	PME	2.5-3.5'	1,100	<300	500	10,000	10,900
SB-21	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-22	11/22/2021	PME	2.5-3.5'	400	<300	<300	900	1,900
SB-22	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
SB-23	11/22/2021	PME	2.4-3.5'	2,200	500	1,000	12,100	15,100
SB-23	11/22/2021	PME	5-6'	<300	<300	<300	<300	<300
1a	7/15/2022	McDowell	0'- 1'	<300	<300	<300	<300	<300
2a	7/15/2022	McDowell	0'- 1'	300	<300	<300	1,000	1,600
2b	7/15/2022	McDowell	2'- 3'	<300	<300	<300	<300	<300
3b	7/15/2022	McDowell	2'6"- 3'	500	<300	<300	800	1,400
3c	7/15/2022	McDowell	3'6"-- 4'	300	<300	<300	700	1,100
3e	7/15/2022	McDowell	4'6"- 5'	2,400	500	1,400	13,500	13,300
3e-D	7/15/2022	McDowell	duplicate	4,700	800	1,900	24,400	23,800
4b	7/15/2022	McDowell	3'- 3'6"	1,600	500	900	9,700	9,700
5a	7/15/2022	McDowell	1'- 2'	23,500	6,200	23,300	27,400	43,300
5b	7/15/2022	McDowell	3'- 4'	<300	<300	<300	<300	<300
6a	7/15/2022	McDowell	2'- 3'	5,400	500	1,300	26,400	37,700
6b	7/15/2022	McDowell	3'6"- 4'6"	500	<300	<300	1,000	2,000
7b	7/15/2022	McDowell	3'- 4'	1,500	<300	<300	5,900	7,100
7c	7/15/2022	McDowell	5'- 6'	3,400	500	600	16,500	20,700
7e	7/15/2022	McDowell	7'- 7'10"	3,600	<300	500	16,900	18,700
8b	7/15/2022	McDowell	3'- 4'	400	<300	<300	1,500	1,600
9b	7/15/2022	McDowell	3'- 4'	<300	<300	<300	700	1,100
9b-D	7/15/2022	McDowell	duplicate	500	<300	<300	2,300	2,400
9c	7/15/2022	McDowell	5'8"- 6'	<300	<300	<300	<300	<300
10b	7/15/2022	McDowell	3'- 4'	300	<300	<300	800	1,200
11b	7/15/2022	McDowell	2'- 3'	<300	<300	<300	<300	<300
12b	7/15/2022	McDowell	3'6"- 4'	<300	<300	<300	400	600
12c	7/15/2022	McDowell	5'- 6'	<300	<300	<300	700	900
103d	7/21/2022	McDowell	5'- 6'	<300	<300	<300	<300	<300
Unrestricted Site Specific Volatilization to Indoor Air Criteria				**NA**	**1,700**	**67**	**1,700**	**25,000,000**
EGLE Generic Residential Particulate Inhalation Criteria (0.77 Modifier)				**ID**	**515,900,000**	**154,000,000**	**5,159,000**	**5,159,000,000**
EGLE Generic Residential Ambient Volatile Air Inhalation Criteria (0.77 Modifier)				**NLV**	**1,155,000**	**231,000**	**12,320,000**	**500,500,000**
EGLE Generic Residential Direct Contact Criteria				**20,000**	**8,100,000**	**16,000,000**	**1,600,000**	**29,000,000**

NOTES:

1. All values expressed in µg/kg
2. Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Criteria from Table 2. Soil: Residential, and Table 3. Soil: Nonresidential. Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels," dated December 30, 2013.
3. Most rigorous of Ambient Air Criteria presented.
4. Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
5. "ID" = EGLE indicates inadequate data to develop criterion.
6. "NLV" = EGLE indicates not likely to volatilize.
7. NA- not applicable.
8. DATA indicates insufficient physical chemical parameters to calculated a health-based SS VIAC. If detections are present, health-based soil vapor SS VIAC should be used to evaulate risk.
9. Values shown thus [ ] exceed EGLE Generic Residential Direct Contact Criteria.
10. Values shown thus [ ] exceed EGLE SS VIAC.
11. Unrestricted Site Specific Volatlization to Indoor Air Criteria from EGLE Memo dated 03/21/2022.

Table 3

Summary of Detected VOCs Chemistry Results (Soil)

McDowell Job No. 22-16296

JL 10/14/2022

TABLE 3 - SUMMARY OF DETECTED VOCs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Benzene 71432	sec-Butylbenzene 135988	2-Methylnaphthalene 91576	Naphthalene 91203	1,2,4-Trimethylbenzene 95636	Tetrachloroethene 127184	Toluene 108883	Xylenes 1330207
CO-SB-1	12/17/2010	AKT	4-6'	ND	110	ND	ND	110	ND	ND	ND
CO-SB-1	12/17/2010	AKT	10-12'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-2	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-2	12/17/2010	AKT	10-12'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-3	12/17/2010	AKT	1-3'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-3	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-4	12/17/2010	AKT	2-4'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-5	12/17/2010	AKT	2-4'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-5	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-6	12/17/2010	AKT	2-4'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-6	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-7	12/17/2010	AKT	1-3'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-7	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-8	12/17/2010	AKT	1-3'	ND	ND	ND	ND	ND	1,600	ND	ND
CO-SB-8	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	200	ND	ND
CO-SB-8 DUP	12/17/2010	AKT	4-6'	ND	ND	ND	ND	ND	150	ND	ND
CO-SB-9	12/17/2010	AKT	2-4'	ND	ND	ND	ND	ND	200	ND	ND
CO-SB-9	12/17/2010	AKT	13-15'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-10	12/17/2010	AKT	3-5'	ND	ND	ND	ND	ND	340	ND	ND
CO-SB-10	12/17/2010	AKT	12-14'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-11	12/17/2010	AKT	7-9'	ND	ND	500	1,100	ND	70	ND	ND
CO-SB-11	12/17/2010	AKT	13-15'	ND	ND	ND	ND	ND	ND	ND	ND
CO-SB-12	12/17/2010	AKT	2-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-1	12/18/2013	PME	1-2'	ND	ND	ND	ND	ND	ND	ND	ND
SB-1	12/18/2013	PME	8-9'	ND	ND	ND	ND	ND	ND	ND	ND
SB-2	12/18/2013	PME	3-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-3	12/18/2013	PME	4-5'	ND	ND	1,180	ND	ND	ND	ND	ND
SB-4	12/18/2013	PME	2.5-3.5'	ND	ND	ND	ND	ND	ND	ND	ND
SB-5	12/18/2013	PME	1-2'	ND	ND	ND	ND	ND	ND	ND	ND
SB-6	12/18/2013	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-7	12/18/2013	PME	3-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-8	12/18/2013	PME	2-3'	ND	ND	ND	610	ND	ND	ND	ND
SB-9	12/18/2013	PME	2-3'	ND	ND	ND	ND	ND	ND	ND	ND
SB-10	12/18/2013	PME	4-5'	ND	ND	ND	ND	ND	160	ND	ND
SB-10	12/18/2013	PME	8-9'	ND	ND	ND	ND	ND	ND	ND	ND
SB-11	12/18/2013	PME	4-5'	ND	ND	ND	ND	ND	2,030	ND	ND
SB-11	12/18/2013	PME	9-10'	ND	ND	ND	ND	ND	ND	ND	ND
SB-13	12/18/2013	PME	9-10'	ND	ND	ND	ND	ND	ND	ND	ND
SB-14	12/19/2013	PME	2.5-3.5'	ND	ND	ND	ND	ND	ND	ND	ND
SB-15	12/19/2013	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-13	11/22/2021	PME	3-4'	ND	ND	100	ND	ND	ND	ND	ND
SB-13	11/22/2021	PME	4.5-5.5'	ND	ND	700	500	ND	ND	ND	ND
SB-14	11/22/2021	PME	3-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-14	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-15	11/22/2021	PME	2.5-3.5'	ND	ND	ND	ND	ND	ND	ND	ND
SB-15	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-16	11/22/2021	PME	3-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-16	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-17	11/22/2021	PME	3.5-4.5'	ND	ND	ND	ND	ND	ND	ND	ND
SB-17	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-18	11/22/2021	PME	2.5-3.5'	ND	ND	ND	ND	ND	ND	ND	ND
SB-18	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-19	11/22/2021	PME	3-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-19	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-20	11/22/2021	PME	3-4'	ND	ND	ND	ND	ND	ND	ND	ND
SB-20	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-21	11/22/2021	PME	2.5-3.5'	ND	ND	2,400	6,700	ND	ND	ND	ND
SB-21	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-22	11/22/2021	PME	2.5-3.5'	ND	ND	ND	ND	ND	ND	ND	ND
SB-22	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
SB-23	11/22/2021	PME	2.4-3.5'	ND	ND	200	ND	ND	ND	ND	ND
SB-23	11/22/2021	PME	5-6'	ND	ND	ND	ND	ND	ND	ND	ND
1a	7/15/2022	McDowell	0'- 1'	ND	ND	ND	ND	ND	ND	ND	ND
2b	7/15/2022	McDowell	2'- 3'	ND	ND	ND	ND	ND	ND	ND	ND
3b	7/15/2022	McDowell	2'6"- 3'	ND	ND	ND	ND	ND	60	70	ND
3c	7/15/2022	McDowell	3'6"-- 4'	ND	ND	ND	ND	ND	80	ND	ND
3e	7/15/2022	McDowell	4'6"- 5'	ND	ND	500	1,400	ND	380	ND	ND
3e-D	7/15/2022	McDowell	duplicate	ND	ND	ND	ND	ND	ND	ND	ND
4b	7/15/2022	McDowell	3'- 3'6"	ND	ND	ND	ND	ND	ND	ND	ND
5a	7/15/2022	McDowell	1'- 2'	110	ND	1,700	7,000	60	90	170	200
5b	7/15/2022	McDowell	3'- 4'	ND	ND	ND	ND	ND	ND	ND	ND
6a	7/15/2022	McDowell	2'- 3'	ND	ND	ND	ND	ND	1,390	ND	ND
6b	7/15/2022	McDowell	3'6"- 4'6"	ND	ND	ND	ND	ND	150	ND	ND
7b	7/15/2022	McDowell	3'- 4'	ND	ND	ND	ND	ND	ND	ND	ND
7c	7/15/2022	McDowell	5'- 6'	ND	ND	ND	ND	ND	ND	ND	ND
7e	7/15/2022	McDowell	7'- 7'10"	ND	ND	ND	ND	ND	ND	ND	ND
8b	7/15/2022	McDowell	3'- 4'	ND	ND	ND	ND	ND	ND	ND	ND
9b	7/15/2022	McDowell	3'- 4'	ND	ND	ND	ND	ND	ND	ND	ND
9b-D	7/15/2022	McDowell	duplicate	ND	ND	ND	ND	ND	ND	ND	ND
9c	7/15/2022	McDowell	5'8"- 6'	ND	ND	ND	ND	ND	ND	ND	ND
10b	7/15/2022	McDowell	3'- 4'	ND	ND	ND	ND	ND	ND	ND	ND
11b	7/15/2022	McDowell	2'- 3'	ND	ND	ND	ND	ND	ND	ND	ND
12b	7/15/2022	McDowell	3'6"- 4'	ND	ND	ND	ND	ND	ND	ND	ND
12c	7/15/2022	McDowell	5'- 6'	ND	ND	ND	ND	ND	ND	ND	ND
103d	7/21/2022	McDowell	5'- 6'	ND	ND	ND	ND	ND	ND	ND	ND
125	7/21/2022	McDowell	4'- 5'	ND	ND	ND	ND	ND	ND	ND	ND
Unrestricted Site Specific Volatilization to Indoor Air Criteria				**47**	**3,800**	**1,700**	**67**	**2,600**	**6.2**	**64,000**	**5,000**
EGLE Generic Residential Particulate Inhalation Criteria (0.77 Modifier)				**266,000,000**	**308,000,000**	**515,900,000**	**154,000,000**	**63,140,000,000**	**2,079,000,000**	**20,790,000,000**	**223,300,000,000**
EGLE Generic Residential Ambient Volatile Air Inhalation Criteria (0.77 Modifier)				**10,010**	**ID**	**1,155,000**	**231,000**	**16,170,000**	**130,900**	**2,156,000**	**35,420,000**
EGLE Generic Residential Direct Contact Criteria				**180,000**	**2,500,000**	**8,100,000**	**16,000,000**	**32,000,000**	**200,000**	**50,000,000**	**410,000,000**

NOTES:

1. All values expressed in µg/kg
2. Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Criteria from Table 2. Soil: Residential, and Table 3. Soil: Nonresidential. Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels," dated December 30, 2013.
3. Most rigorous of Ambient Air Criteria presented.
4. Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
5. Unrestricted Site Specific Volatlization to Indoor Air Criteria from EGLE Memo dated 03/21/2022.
6. Values shown thus [ ] exceed EGLE Unrestricted SS VIAC.
7. ND- not detected.

Table 4

Summary of Detected VOCs Chemistry Results (Soil Gas)

TABLE 4- SUMMARY OF VOLATILE ORGANICS CHEMISTRY RESULTS (Soil Gas)

Sample	Date	Depth	Acetone 67641	Benzene 71432	2-Butanone (MEK) 78933	t-Butyl Alcohol 75650	Carbon Disulfide 75150	Chloromethane 74873	Cyclohexane 110827
SG-1	12/18/2013	1'	52.7	2.8	9.4	2.7	<2.5	0.89	<2.8
SG-8	12/18/2013	2'	112	2.7	7.4	2.5	2.6	1.2	1.3
SG-9	12/18/2013	2'	36.8	4.8	2.9	<2.4	<2.5	1.3	<2.8
SG-10	12/18/2013	4.5'	94.5	4.5	6.8	2.4	<2.5	1.1	<2.8
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)
SG-14	11/23/2021	5'	<48	<6.4	<59	<30	<16	<41	<6.9
SG-20	11/23/2021	5'	120	<6.4	<59	<30	19	<41	17
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			**1,000,000**	**110**	**170,000**	**2,500**	**24,000**	**3,100**	**210,000**

Sample	Date	Depth	Dichlorodifluoromethane 75718	1,3-Dichlorobenzene 541731	Ethanol 64174	Ethylbenzene 100414	Ethyl Acetate 141786	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113) 76131	n-Heptane 142825
SG-1	12/18/2013	1'	3.4	<4.8	30.9	3.3	46.4	881	2.8
SG-8	12/18/2013	2'	2.9	9.6	20	3.3	<2.9	110	3.7
SG-9	12/18/2013	2'	2.9	6.0	19.6	3.4	16	95.0	4.9
SG-10	12/18/2013	4.5'	2.8	8.4	22	4.3	<2.9	85.8	5.3
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	7,300	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)
SG-14	11/23/2021	5'	<9.9	<12	27,000	<8.7	<72	<15	<8.2
SG-20	11/23/2021	5'	<9.9	<12	12,000	<8.7	<72	<15	33
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			**11,000**	**100**	**630,000**	**340**	**NL**	**660,000**	**120,000**

Sample	Date	Depth	n-Hexane 110543	Isopropyl Alcohol 67630	Methylene Chloride 75092	Propylene 115071	Tetrachloroethene 127184	Tetrahydrofuran 109999
SG-1	12/18/2013	1'	21	135	76.1	<3.4	1.2	7.7
SG-8	12/18/2013	2'	30	1240	106	18.4	2.6	1.2
SG-9	12/18/2013	2'	27	777	73.3	12	1.8	1.8
SG-10	12/18/2013	4.5'	26	846	57.3	24	37	2.9
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)
SG-14	11/23/2021	5'	11	<49	<17	<170	<14	<5.9
SG-20	11/23/2021	5'	49	<49	<17	<170	<14	<5.9
EGLE Residential Soil Vapor Volatiliztion to Indoor Air Pathway (VIAP) Screening Levels			**24,000**	**7,000**	**21,000**	**NL**	**1,400**	**70,000**
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			**24,000**	**7,000**	**21,000**	**NL**	**1,400**	**70,000**

Sample	Date	Depth	Trichloroethylene 79016	Trichlorofluoromethane 75694	1,2,4-Trimethylbenzene 95636	2,2,4-Trimethylpentane 540841	Toluene 108883	Xylenes 1330207
SG-1	12/18/2013	1'	0.86	2.4	2.5	2.0	19	16
SG-8	12/18/2013	2'	<0.86	2.4	2.2	<3.7	18	16
SG-9	12/18/2013	2'	<0.86	<4.5	2.3	<3.7	28	17
SG-10	12/18/2013	4.5'	1.1	2.1	4.3	<3.7	28	19
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	290	<250 (TO-17)
SG-14	11/23/2021	5'	<11	<11	<9.8	<9.3	<7.5	<26
SG-20	11/23/2021	5'	<11	<11	<9.8	<9.3	<7.5	<26
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			**67**	**15,000**	**2,100**	**120,000**	**170,000**	**7,600**

NOTES:
1. All values shown in micrograms per cubic meter (ug/m3).
2. Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
3. EGLE Residential VIAP Screening Levels from EGLE Guidance Document for the Vapor Intrusion Pathway, Appendix D (September 4, 2020).
4. EGLE Site-Specific Volatilization to Indoor Air Criteria (SS VIAC) dated March 21, 2022.
5. NL- not listed with screening Level or SS VIAC

Attachment I

Legal Description/Alta Map

ZONING DATA

(FROM CITY OF DETROIT ZONING ORDINANCE, DATED NOV. 21, 2012)

ZONED: R1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
SETBACKS: (PARKING)
FRONT – 20' OR EQUAL TO THE FRONT SETBACK ON THE ADJOINING LOT
SIDE – 10'
(NO SIDE SETBACK REQUIRED WHERE PARKING ABUTS AN ALLEY OR NON-RESIDENTIALLY ZONED PROPERTY)
REAR – N/A

ZONED: R2 (TWO-FAMILY RESIDENTIAL DISTRICT)
SETBACKS: (PARKING)
FRONT – 20' OR EQUAL TO THE FRONT SETBACK ON THE ADJOINING LOT
SIDE – 10'
(NO SIDE SETBACK REQUIRED WHERE PARKING ABUTS AN ALLEY OR NON-RESIDENTIALLY ZONED PROPERTY)
REAR – N/A

ZONED: B4 (GENERAL BUSINESS DISTRICT)
SETBACKS: (PARKING)
FRONT – 20' OR EQUAL TO THE FRONT SETBACK ON THE ADJOINING LOT
SIDE – 10'
(NO SIDE SETBACK REQUIRED WHERE PARKING ABUTS AN ALLEY OR NON-RESIDENTIALLY ZONED PROPERTY)
REAR – N/A

(BUILDING)
FRONT – N/A
SIDE – N/A
REAR – N/A

CERTIFICATION

I HEREBY CERTIFY TO:

SOUTHWEST HOUSING SOLUTIONS CORPORATION,
A MICHIGAN NON-PROFIT CORPORATION
FIRST AMERICAN TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1–4, 6(A), 8, 11(A), 13, 16, 17, 21 AND 22 (NOTE ENCROACHMENTS ON SURVEY, IF APPLICABLE)OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 3, 2013.

DATE OF PLAT OR MAP: 12–12–13

RAYMOND J. DONNELLY, PS #21563 (MICH.)

SCHEDULE B-II EXCEPTIONS

FIRST AMERICAN TITLE INSURANCE COMPANY
TITLE COMMITMENT NO. 643989 REVISION A
EFFECTIVE DATE: NOV. 12, 2013 (DATE PRINTED 12-10-13)

ITEM 1.
CERTIFICATE OF FORFEITURE FOR 2011 TAXES AS DISCLOSED BY INSTRUMENT DATED MARCH 1, 2013, RECORDED MARCH 13, 2013, IN LIBER 50573, PAGE 1128, AS TO PARCEL 3.
(NOT PLOTTABLE)

ITEM 2.
INTEREST OF SOUTHWEST HOUSING SOLUTIONS, AS DISCLOSED BY QUIT CLAIM RECORDED IN LIBER 48597, PAGE 729, AS TO PARCEL 5.
(NOT PLOTTABLE)

ITEM 3.
ANY CLAIM ARISING FROM A PARTY OCCUPYING THE INSURED PROPERTY WHICH WOULD REQUIRE THE INSURED TO COMMENCE AN ACTION FOR EVICTION, AS TO PARCELS 5, 6, 7 AND 8
(NOT PLOTTABLE)

ITEM 4.
SUBJECT TO A VISIBLE OR RECORDED EASEMENT OR RIGHT–OF WAY; PRIVATE DEED RESTRICTIONS; FUTURE INSTALLMENTS OF SPECIAL ASSESSMENTS; CERTAIN ENVIRONMENTAL LIENS AND OIL AND GAS INTERESTS MORE FULLY DESCRIBED BY SECTION 78K OF THE GENERAL PROPERTY TAX ACT; AND REVERTER RIGHTS IF ANY CONTAINED IN THE DEED EXECUTED BY THE FORECLOSING GOVERNMENTAL UNIT, AS TO PARCELS 5, 6, 7 AND 8.
(NOT PLOTTABLE)

ITEM 5.
INTEREST OF CITY HOUSES, LLC, A MICHIGAN LIMITED LIABILITY COMPANY, AS DISCLOSED BY QUIT CLAIM RECORDED IN LIBER 47908, PAGE 1469, AS TO PARCEL 4.
(NOT PLOTTABLE)

ITEM 6.
OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 20159, PAGE 250, LIBER 22791, PAGE 473, LIBER 23276, PAGE 138 AND IN LIBER 23804, PAGE 440, AS TO PARCEL 1.
(NOT PLOTTABLE – BLANKET IN NATURE OVER LOTS 2, 3 AND 4 OF PARCEL 1)

ITEM 7.
TERMS AND CONDITIONS OF DEED RECORDED IN LIBER 21307, PAGE 671, AS TO PARCEL 1.
(NOT PLOTTABLE)

ITEM 8.
TERMS AND CONDITIONS OF DEED RECORDED IN LIBER 50179, PAGE 651, AS TO PARCEL 5
(NOT PLOTTABLE)

ITEM 9.
ANY RIGHTS, TITLE INTEREST OR CLAIM THEREOF TO THAT PORTION OF THE LAND TAKEN, USED OR GRANTED FOR STREETS, ROADS OR HIGHWAYS, AS TO PARCEL 3.
(NOT PLOTTABLE)

ITEM 10.
RIGHTS OF TENANTS, IF ANY, UNDER ANY UNRECORDED LEASES.
(NOT PLOTTABLE)

ITEM 11.
LIEN FOR OUTSTANDING WATER OR SEWER CHARGES, IF ANY.
(NOT PLOTTABLE)

ITEM 12.
ANY LIEN RELATING TO THE INSPECTION, DEMOLITION OR REMOVAL OF ANY IMPROVEMENT THAT HAS BEEN OR IS PRESENTLY LOCATED ON THE PROPERTY.
(NOT PLOTTABLE)

ITEM 13.
LIEN RESULTING FROM THE ELIGIBLE TAX REVERTED PROPERTY SPECIFIC TAX AS DESCRIBED IN MCL 211.1025(1).
(NOT PLOTTABLE)

ITEM 14.
INTEREST OF TAMEKA MARIE WELLS, AS DISCLOSED BY QUIT CLAIM DEED RECORDED IN LIBER 30027, PAGE 218, AS TO PARCEL 8.
(NOT PLOTTABLE)

ITEM 15.
INTEREST OF CARDIFF PROPERTIES, LLC, A MICHIGAN LIMITED LIABILITY COMPANY, AS DISCLOSED BY QUIT CLAIM DEED RECORDED IN LIBER 40365, PAGE 1177, AS TO PARCELS 6 AND 7.
(NOT PLOTTABLE)

ITEM 16.
OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 20888, PAGE 693, REGISTER #G511879, AS TO PARCEL 7.
(NOT PLOTTABLE – BLANKET IN NATURE OVER THE NORTH 27' OF LOT 6, PARCEL 7)

ITEM 17.
OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 25601, PAGE 506, AS TO PARCEL 8.
(NOT PLOTTABLE – BLANKET IN NATURE OVER LOT 11, PARCEL 8)

ITEM 18.
OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 27889, PAGE 76, AS TO PARCEL 6.
(NOT PLOTTABLE – BLANKET IN NATURE OVER PART OF LOT 6, PARCEL 6)

ITEM 19.
TERMS AND CONDITIONS CONTAINED IN QUIT CLAIM DEED AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 28299, PAGE 271, AS TO PARCEL 8.
(NOT PLOTTABLE)

ITEM 20.
TERMS AND CONDITIONS CONTAINED IN QUIT CLAIM DEED AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 30027, PAGE 218, AS TO PARCEL 8.
(NOT PLOTTABLE)

ITEM 21.
TERMS AND CONDITIONS CONTAINED IN QUIT CLAIM DEED AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 50094, PAGE 350, AS TO PARCELS 6 AND 7.
(NOT PLOTTABLE)

ITEM 22 THROUGH 32
TAX INFORMATION
(PARCEL I.D. NUMBERS SHOWN ON DRAWING)

PROPERTY DESCRIPTION (CONTINUED)

PARCEL 3:
PART OF LOT 6, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS AND PART OF PRIVATE CLAIM 171, TOWN 2 SOUTH, RANGE 11 EAST, CITY OF DETROIT, WAYNE COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT THE INTERSECTION OF THE WEST LINE OF CAMPBELL AVENUE WITH THE NORTH LINE OF MICHIGAN AVENUE; THENCE ALONG THE WEST LINE OF CAMPBELL AVENUE NORTH 27 DEGREES 19 MINUTES WEST 235.45 FEET TO A POINT ON THE EASTERLY LINE OF LOT 6, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM 171, CITY OF DETROIT, WAYNE COUNTY, MICHIGAN, AS RECORDED IN LIBER 12, PAGE 24 OF PLATS, WAYNE COUNTY RECORDS; SAID POINT BEING NORTH 27 DEGREES 19 MINUTES WEST 17.90 FEET FROM THE SOUTHEASTERLY CORNER OF LOT 6; THENCE SOUTH 67 DEGREES 33 MINUTES 53 SECONDS WEST 43.62 FEET TO A POINT ON THE SOUTHERLY LINE OF LOT 6, SAID POINT BEING NORTH 89 DEGREES 08 MINUTES 28 SECONDS WEST 49.30 FEET FROM THE SOUTHEAST CORNER OF SAID LOT 6; THENCE ALONG THE SOUTHERLY LINE OF LOT 6, NORTH 89 DEGREES 08 MINUTES 26 SECONDS WEST 122.92 FEET TO THE SOUTHWESTERLY CORNER OF LOT 6; THENCE SOUTH 19 DEGREES 36 MINUTES 14 SECONDS EAST 204.47 FEET TO A POINT ON THE NORTH LINE OF MICHIGAN AVENUE; THENCE ALONG THE NORTH LINE OF MICHIGAN AVENUE, SOUTH 89 DEGREES 30 MINUTES EAST 202.68 FEET TO THE POINT OF BEGINNING.

TAX ITEM NO. 1706–8/WARD 16

PARCEL 4:
LOT 7, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.

TAX ITEM NO. 15321/WARD 16

PARCEL 5:
LOT 9, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.

TAX ITEM NO. 15322/WARD 16

PARCEL 6:
PART OF LOT 6, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS, DESCRIBED AS: BEGINNING AT POINT IN WEST LINE OF CAMPBELL STREET DISTANT NORTH 27 DEGREES 19 MINUTES WEST 273.25 FEET ALONG SAID LINE FROM NORTH LINE OF MICHIGAN AVENUE; THENCE SOUTH 27 DEGREES 19 MINUTES EAST 37.80 FEET; THENCE SOUTH 67 DEGREES 33 MINUTES 53 SECONDS WEST 43.62 FEET; THENCE NORTH 89 DEGREES 08 MINUTES 26 SECONDS WEST 71.42 FEET; THENCE EASTERLY 106.00 FEET TO THE POINT OF BEGINNING.

TAX ITEM NO. 14695/WARD 16

PARCEL 7:
THE NORTH 27 FEET OF LOT 6, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.

TAX ITEM NO. 14694/WARD 16

PARCEL 8:
LOT 11, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.

TAX ITEM NO. 15323/WARD 16

NOTE:
PARCEL 8 IS SUBJECT TO RESTRICTIVE COVENANT THAT NO STRUCTURE SHALL BE ERRECTED, PLACED, OR PERMITTED ON THE LAND HEREIN CONVEYED, EXCEPT AND ONLY AS SUCH IS MADE AND USED AS PART AND PARCEL OF LOT 13.
QUIT CLAIM DEED – LIBER 28299, PAGE 271
QUIT CLAIM DEED – LIBER 30027, PAGE 218

PROPERTY DESCRIPTION

(FROM FIRST AMERICAN TITLE INSURANCE COMPANY TITLE POLICY COMMITMENT NO. 643989, REVISION A, EFFECTIVE DATE NOVEMBER 12, 2013 - DATE PRINTED: DECEMBER 10, 2013)

LAND IN THE COUNTY OF WAYNE, CITY OF DETROIT, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

PARCEL 1:
LOTS 1 THROUGH 4, BOTH INCLUSIVE, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.

TAX ITEM NO(S):
1701/WARD 16, AS TO LOT 1
1702/WARD 16, AS TO LOT 2
1703/WARD 16, AS TO LOT 3
1704/WARD 16, AS TO LOT 4

PARCEL 2:
LOT 5, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.

TAX ITEM NO. 1705/WARD 16

FLOOD PLAIN DATA

THIS PARCEL LIES IN F.E.M.A. ZONE "x" (NOT SUBJECT TO FLOODING) PER F.I.R.M. COMMUNITY PANEL NO. 26163C0280C DATED FEBRUARY 2, 2012.

4 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171

NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL M-I-S-S-D-I-G

ANY INFORMATION OR DATA ON THIS DRAWING IS NOT INTENDED TO BE SUITABLE FOR REUSE BY ANY PERSON, FIRM OR CORPORATION OR ANY OTHERS ON EXTENSIONS OF THIS PROJECT OR FOR ANY USE ON ANY OTHER PROJECT, ANY REUSE WITHOUT WRITTEN VERIFICATION AND ADAPTATION BY THE SURVEYOR OR ENGINEER FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT THE USERS SOLE RISK AND WITHOUT LIABILITY OF LEGAL EXPOSURE TO THE SURVEYOR OR ENGINEER.

SCALE: 1"=20'

LAND AREA: 11,759.2 SQ. FT. 0.27 ACRES

LAND AREA: 60,938.6 SQ. FT. 1.3990 ACRES

CONCRETE WALK ENCROACHMENT DETAIL
SCALE: 1"=20'

LOCATION MAP

LEGEND

ABBREVIATIONS

FI	FOUND IRON ROD
FIP	FOUND IRON PIPE
FM	FOUND CONCRETE MONUMENT
SI	SET IRON ROD
SMN	SET MAG. NAIL
C	CALCULATED
M	MEASURED
R	RECORD
CLF	CHAIN LINK FENCE
CB	CATCH BASIN
CO	CLEAN OUT
DS	DOWNSPOUT
ENCR	ENCROACHMENT
FF	FINISHED FLOOR
GV&W	GATE VALVE & WELL
HYD	HYDRANT
INL	INLET
IE	INVERT ELEVATION
LP	LIGHT POLE
MH	MANHOLE
NTS	NOT TO SCALE
OH	OVERHEAD
SB	SOIL BORING
TC	TOP OF CURB
UG	UNDERGROUND
UP	UTILITY POLE

SYMBOLS

- c — CABLE
- E — ELECTRIC
- FENCE
- GAS
- GUY WIRE & ANCHOR
- SANITARY SEWER
- STORM SEWER
- T — TELEPHONE
- TRAVERSE/CONTROL POINT
- WATER MAIN

REVISIONS

SEAL

STATE OF MICHIGAN
RAYMOND J. DONNELLY
SURVEYOR
No. 21563
REGISTERED LAND SURVEYOR

RJD SURVEYORS
"We Help Measure Your Success Every Day"

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"Over 31 Years of Excellence"

1853 E. Maple Road
Troy, MI 48083-4207
Phone: 248.689.5555
Fax: 248.689.5677
Web:www.rjdsurveyors.com

PROJECT NAME

ALTA/ACSM LAND TITLE SURVEY
5800 MICHIGAN AVE.
DETROIT, MI

CLIENT

SOUTHWEST HOUSING SOLUTIONS CORPORATION
1920 25TH STREET, SUITE A
DETROIT, MI 48216

DRAWN BY	DATE	SCALE
J.E.K.	12-12-13	1"=20'

PROJECT	SHEET
2013-078	1 OF 1

Attachment II

Declaration of Restriction

2014 APR -7 PM 2:09

Bernard J. Youngblood
Wayne County Register of Deeds
2014127051 L: 51413 P: 880
04/07/2014 02:09 PM RST Total Pages: 5

First American Title

DECLARATION OF RESTRICTIONS

THIS DECLARATION OF RESTRICTIONS (the "Declaration") is made and entered into as of the 17 day of March, 2014 by and between Cardiff Properties, LLC, a Michigan limited liability company, whose address is 5931 Michigan Avenue, Detroit, Michigan 48210 ("Seller"), and Southwest Housing Solutions Corporation, a Michigan nonprofit corporation, whose address is 1920 25th Street, Detroit, Michigan 48216 ("Purchaser"). Seller and Purchaser when referred to together are sometimes hereinafter referred to as the "Parties

RECITALS

A. Pursuant to a certain Offer to Purchase Real Estate executed by and between Purchaser and Seller, Purchaser is or is about to become the fee simple owner of land located in the City of Detroit, Wayne County, Michigan known as: 5800, 5840, 5848, 5850, 5858 and 5862 Michigan Avenue and 4028 and 4034 Wesson, Detroit, Michigan 48210 and more fully described in Exhibit A and is hereinafter referred to as the "Purchaser Parcel".

B. Pursuant to the terms of said Offer to Purchase Real Estate, the Parties desire to impose on the Purchaser Parcel certain covenants and restrictions, hereinafter set forth, for the benefit of property currently owned by Prince Valley Real Estate, LLC, an affiliated company of Seller, located at 5931 Michigan Avenue, Detroit, Michigan 48210 ("Prince Valley Parcel") and any future owner(s), successors or assigns of the Prince Valley Parcel ("PVP Owner").

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein and other valuable consideration, the receipt and sufficiency which is hereby acknowledged, the Parties agree as follows:

1. Prohibited Commercial Activities. The Purchaser Parcel may be used for any lawful purpose except for the following prohibited uses: drug store of any kind; sale of liquor for off premises consumption in package form, including without limitation beer, wine and ale; grocery store; supermarket; supercenter; combination food and general merchandise store; any discount retail facility; variety store; dollar store or variety discount store; any retail store operated by or under the name of Fred's, Marc's, Wal-Mart, K-Mart, Sears Holdings, Meijer's, Duckwall-Alco, A. J. Wright, Big Lots, Shopko, Pamida, Value City, Dolgencorp or Dollar General, Bonus Dollar, Deals, Only Deals, 99 Cents Only, Dollar Tree, or any entity controlled by, affiliated with or related to any of them, or any other dollar store or single price point store, or any store operated by variety wholesalers including but not limited to Maxway, Roses, Super 10, ValuMart, Pope's and Bargaintown; department store; warehouse club; wholesale club; gas station; used car lot; or an amusement or recreation establishment such as a pool hall, bowling alley, massage parlor, game center, theater, play house, night club, movie theater, adult book store, or establishment featuring a male or female revue; any combination of, or parking to support any or all of the foregoing prohibited uses. This restriction, as it applies to medicinal

643989 BN

drugs, shall not apply to doctors, dentists or veterinarians who administer medicinal drugs to their patients as part of an on-site medical treatment during office visits. This restriction, as it applies to pharmacies, shall also not apply to any independent or Purchaser owned pharmacy located on property as long as the pharmacy does not occupy more than 1,500 square feet of rental space.

2. Term. This Declaration shall continue for a term of twenty (20) years from the date hereof, or as long as Seller owns the business on the Prince Valley Parcel, whichever shall be shorter. Temporary cessation of operation upon the Prince Valley Parcel due to fire or other casualty, acts of God, labor disputes or other causes beyond the reasonable control of the owner of the PVP Owner and a temporary cessation of use for not more than seven hundred thirty (730) consecutive days for the purpose of making alterations or for reletting shall not be deemed a cessation of operation within the meaning of this Paragraph.

3. Covenants Running With Land. The restrictions hereby imposed and the agreements herein contained shall be restrictions and covenants running with the land and shall inure to the benefit of the Prince Valley Parcel. The restrictions and covenants herein shall be binding upon the Parties and their respective heirs, successors and assigns, including, but without limitation, all subsequent owners of all or any part of the Purchaser Parcel or the PVP Owner and all those claiming by through or under them.

4. Legal and Equitable Relief. The PVP Owner and its successors and assigns shall have the right to prosecute any proceedings at law or in equity against Purchaser and its successors and assigns, or any other person or entity violating, attempting to violate or defaulting upon any of the provisions contained in this Declaration, in order to prevent any violation, attempted violation or default upon the provisions of this Declaration and to recover damages for any such violation or default. The remedies available under this Paragraph shall include, by way of illustration but not limitation, ex parte applications for temporary restraining orders, preliminary injunctions and permanent injunctions enjoining any such violation or attempted violation or default, and actions for specific performance of this Declaration. Notwithstanding anything in this Declaration to the contrary, nothing herein shall be deemed to create a reversion, possibility of reverter, or right of entry in the event of breach of the covenants herein or the termination or lapse of this Declaration.

5. Litigation Expense. If litigation arises out of or in connection with this Declaration, the party prevailing to judgment shall be entitled to recover its reasonable attorney fees.

6. Waiver of Default. No waiver of any default by the PVP Owner to this Declaration shall be implied from any omission by the PVP Owner to take any action with respect to any such default if such default continues or is repeated. In addition, no express waiver of any default shall affect any other default or cover any period of time other than the default and period of time specified in such express waiver. One or more waivers of any default in the performance of any term, provision or covenant contained in this Declaration shall not be deemed to be a waiver of any subsequent default in the performance of the same term, provision or covenant or any other term, provision or covenant contained in this Declaration. The consent or approval by the PVP Owner to or of any act or request by Purchaser requiring consent or approval shall not be deemed to waive or render unnecessary the consent to or approval of any subsequent similar acts or requests. PVP Owner's rights and remedies under this Declaration are cumulative and no one of such rights and remedies shall be exclusive of any of the others, or of any other right or remedy at law or in equity which the PVP Owner might otherwise have by

virtue of a default under this Declaration, and the exercise of one such right or remedy by PVP Owner shall not impair its standing to exercise any other right or remedy.

7. Method of Amendment. The provisions of this Declaration may be modified or amended, in whole or in part, only with the consent of the Parties, as the respective fee simple owners of the Purchaser Parcel and the Prince Valley Parcel, by declaration in writing, executed and acknowledged by the Parties, duly recorded in Wayne County, Michigan.

8. No Third Party Beneficiary. The provisions of this Declaration are for the exclusive benefit of the fee simple owner(s) of the Prince Valley Parcel, its successors and assigns, and not for the benefit of any third person or entity. In addition, this Declaration shall not be deemed to have conferred any rights, express or implied, upon any third person or entity.

9. Notices. Any notice or communication which either party desires, or is required, to give the other shall be in writing and shall be delivered in person or sent by certified mail, return receipt requested, to the address shown for that party on the first page of this Declaration or to any subsequent address which may be provided to either party in writing. All notices or communications to PVP Owner shall be directed to the attention of its Real Estate Department. Notices shall be deemed given three (3) days after mailing.

10. Captions. The captions of the paragraphs of this Declaration are for convenience only and shall not be considered nor referred to in resolving questions of interpretation and construction.

11. Governing Law. This Declaration shall be construed in accordance with the laws of the State of Michigan and any applicable federal laws and regulations.

12. Severability. If any term, provision or condition contained in this Declaration shall, to any extent, be invalid or unenforceable, the remainder of this Declaration (or the application of such term, provision or condition to persons or circumstances other than those in respect of which it is invalid or unenforceable) shall not be affected thereby, and each term, provision or condition of this Declaration shall be valid and enforceable to the fullest extent provided by law.

13. Exhibits. All exhibits referred to herein and attached hereto shall be deemed part of this Declaration.

IN WITNESS THEREOF, the Parties have executed this Declaration of Restrictions as of the day and year above first written.

CARDIFF PROPERTIES, LLC,
a Michigan limited liability company

By: _____
Joe Cappy, its Member

SOUTHWEST HOUSING SOLUTIONS CORPORATION, a Michigan nonprofit corporation

By: _____
Timothy Thorland, its Executive Director

STATE OF MICHIGAN)
) SS.
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this 17 day of March, 2014 by Joe Gappy, Member of Cardiff Properties, LLC, a Michigan limited liability company, on behalf of the company.

Patty A Flinchum, Notary Public
State of Michigan, County of Wayne
My Commission Expires 2/10/2018
Acting in the County of Oakland

_____, Notary Public
State of Michigan, County of _____
My Commission Expires: _____
Acting in _____ County

STATE OF MICHIGAN)
) SS.
COUNTY OF Oakland)

The foregoing instrument was acknowledged before me this 17 day of March, by Timothy Thorland, Executive Director of Southwest Housing Solutions Corporation, a Michigan nonprofit corporation, on behalf of the corporation.

Patty A Flinchum, Notary Public
State of Michigan, County of Wayne
My Commission Expires 2/10/2018
Acting in the County of Oakland

_____, Notary Public
State of Michigan, County of _____
My Commission Expires: _____
Acting in _____ County

Drafted by and when recorded return to:

David W. Yaldo
4036 Telegraph Road, Suite 204
Bloomfield Hills, MI 48302

EXHIBIT A
LEGAL DESCRIPTION

File No.: 643989

The land referred to in this Commitment, situated in the County of Wayne, City of Detroit, State of Michigan, is described as follows:

PARCEL 1:
Lots 1 through 4, both inclusive, of PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, according to the plat thereof as recorded in Liber 12 of Plats, page 24, Wayne County Records.

Tax Item Nos.
1701/Ward 16, as to Lot 1
1702/Ward 16, as to Lot 2
1703/Ward 16, as to Lot 3
1704/Ward 16, as to Lot 4

PARCEL 2:
Lot 5, of PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, according to the plat thereof as recorded in Liber 12 of Plats, page 24, Wayne County Records.

Tax Item No. 1705/Ward 16

PARCEL 3:
Part of Lot 6, of PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, according to the plat thereof as recorded in Liber 12 of Plats, page 24, Wayne County Records and Part of Private Claim 171, Town 2 South, Range 11 East, City of Detroit, Wayne County, Michigan, described as: Beginning at the intersection of the West line of Campbell Avenue with the North line of Michigan Avenue; thence along the West line of Campbell Avenue North 27 degrees 19 minutes West 235.45 feet to a point on the Easterly line of Lot 6, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM 171, City of Detroit, Wayne County, Michigan, as recorded in Liber 12, page 24 of plats, Wayne County Records, said point being North 27 degrees 19 minutes West 17.90 feet from the Southeasterly corner of Lot 6; thence South 67 degrees 33 minutes 53 seconds West 43.62 feet to a point on the Southerly line of Lot 6, said point being North 89 degrees 08 minutes 28 seconds West 49.30 feet from the Southeast corner of said Lot 6; thence along the Southerly line of Lot 6, North 89 degrees 08 minutes 26 seconds West 122.92 feet to the Southwesterly corner of Lot 6; thence South 19 degrees 36 minutes 14 seconds East 204.47 feet to a point on the North line of Michigan Avenue; thence along the North line of Michigan Avenue, South 89 degrees 30 minutes East 202.68 feet to the Point of Beginning.

Tax Item No. 1706-8/Ward 16

PARCEL 4:
Lot 7, of PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, according to the plat thereof as recorded in Liber 12 of Plats, page 24, Wayne County Records.

Tax Item No. 15321/Ward 16

Attachment III

EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
WARREN DISTRICT OFFICE

LIESL EICHLER CLARK
DIRECTOR

March 21, 2022

MEMO

DELIVERED VIA ELECTRONIC MAIL 3/21/2022

TO: Jana Beumel, PM Environmental

FROM: Jeanne Schlaufman, EQS
Remediation and Redevelopment Division
Southeast Michigan District

SUBJECT: Request for Site-Specific Criteria for:
Proposed Residential Development
5800 Michigan Avenue, Detroit, Wayne County
Site ID # 82008002

The Department of Environment, Great Lakes, and Energy (EGLE) has developed site-specific volatilization to indoor air criteria for the subject site in response to your request received February 18, 2022.

Inserted within the body of this memo are tables that contain site-specific volatilization to indoor air criteria (SSVIAC) under Part 201 of the Natural Resources and Environmental Protection Act, 1994 PA 451 as amended, which represent EGLE's determination of values that reflect best available information regarding the toxicity and exposure risks posed by the hazardous substances present at the Proposed Residential Development, 5800 Michigan Avenue, Detroit, Wayne County. These values may be used as SSVIAC without further documentation to evaluate the volatilization to indoor air pathway (VIAP). If representative groundwater and soil sampling indicate that site concentrations are below unrestricted residential SSVIAC, there is not a vapor source and there is not a requirement to evaluate the migration of vapors with vapor sampling. Exceedance of unrestricted residential SSVIAC for any media necessitates a representative vapor investigation to evaluate the VIAP. Other values may be developed by a person consistent with the statutory provisions for development of site-specific criteria or screening levels and provided for EGLE review and approval.

Exceedances of these residential SSVIAC will require restrictions or institutional controls for closure or aid in the determination of off-site migration.

The results of this evaluation are as follows:

Table 1. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **restricted** site-specific values apply to a residential structure that has a **slab-on-grade** foundation with an **elevator pit that extends 5 feet below grade**, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
83329	Acenaphthene	3,900 (S) sol	2.1E+05 nc	7,300 nc
208968	Acenaphthylene	65 (CC) nc	DATA	7,300 nc
67641	Acetone	3.5E+07 (EE) st	2.6E+05 (EE) st	1.0E+06 (EE) st
107131	Acrylonitrile	130 ca	1.2 (M) ca	12 ca
994058	t-Amyl methyl ether (TAME)	3,900 nc	34 (M) nc	2,200 nc
120127	Anthracene	43 (S) sol	1.3E+07 nc	35,000 nc
71432	Benzene	36 ca	1.7 (M) ca	110 ca
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut
205992	Benzo(b)fluoranthene	NA	NA	NA
207089	Benzo(k)fluoranthene	NA	NA	NA
191242	Benzo(g,h,i)perylene	NA	NA	NA
50328	Benzo(a)pyrene	NA	NA	NA
108861	Bromobenzene	3,600 nc	160 nc	2,100 nc
75274	Bromodichloromethane	65 ca	0.61 (M) ca	48 ca
75252	Bromoform	7,000 ca	45 (M) ca	770 ca
74839	Bromomethane	63 nc	0.90 (M) nc	350 nc
78933	2-Butanone (MEK)	4.4E+06 (DD) dev	31,000 (DD) dev	1.7E+05 (DD) dev
75650	t-Butyl alcohol	4.4E+05 nc	3,200 nc	2,500 nc
104518	n-Butylbenzene	2,200 nc	560 nc	7,000 nc
135988	sec-Butylbenzene	10,000 nc	3,800 nc	14 nc
98066	t-Butylbenzene	3.7 nc	0.64 (M) nc	14 nc
75150	Carbon disulfide	2,400 nc	52 (M) nc	24,000 nc
56235	Carbon tetrachloride	15 ca	0.31 (M) ca	150 ca
108907	Chlorobenzene	1,400 nc	82 nc	1,700 nc

Table 1. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **restricted** site-specific values apply to a residential structure that has a **slab-on-grade** foundation with an **elevator pit that extends 5 feet below grade**, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
75003	Chloroethane	17,000 nc	330 nc	1.4E+05 nc
67663	Chloroform	20 ca	0.26 (M) ca	37 ca
74873	Chloromethane	370 nc	6.9 (M) nc	3,100 nc
218019	Chrysene	NA	NA	NA
110827	Cyclohexane	2,800 nc	320 (M) nc	2.1E+05 nc
53703	Dibenzo(a,h)anthracene	NA	NA	NA
124481	Dibromochloromethane	63 (MM) mut	0.40 (MM) (M) mut	14 (MM) mut
96128	Dibromochloropropane	4.5E-04 (MM) (M) (CC) mut	DATA	6.2E-02 (MM) mut
95501	1,2-Dichlorobenzene	20,000 nc	1,500 nc	10,000 nc
541731	1,3-Dichlorobenzene	140 nc	10 (M) nc	100 nc
106467	1,4-Dichlorobenzene	330 ca	23 (M) ca	220 ca
75718	Dichlorodifluoromethane	76 nc	12 (M) nc	11,000 nc
75343	1,1-Dichloroethane	170 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	54 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	440 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	120 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	510 nc	12 (M) nc	2,800 nc
78875	1,2-Dichloropropane	110 nc	2.1 (M) nc	140 nc
542756	1,3-Dichloropropene	140 (J) ca	3.1 (M) (J) ca	210 (J) ca
60297	Diethyl ether	47,000 nc	350 nc	35,000 nc
108203	Diisopropyl ether	22,000 (DD) dev	200 (M) (DD) dev	23,000 (DD) dev
64175	Ethanol	1.5E+08 (EE) st	1.3E+06 (EE) st	6.3E+05 (EE) st
637923	Ethyl-tert-butyl ether (ETBE)	22 (CC) nc	DATA	13,000 nc
100414	Ethylbenzene	120 ca	12 (M) ca	340 ca

Table 1. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **restricted** site-specific values apply to a residential structure that has a **slab-on-grade** foundation with an **elevator pit that extends 5 feet below grade**, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
106934	Ethylene dibromide	8.6 ca	7.4E-02 (M) ca	1.4 ca
206440	Fluoranthene	NA	NA	NA
86737	Fluorene	1,700 (S) sol	4.7E+05 nc	4,900 nc
142825	n-Heptane	160 nc	130 nc	1.2E+05 nc
67721	Hexachloroethane	140 ca	3.3 (M) ca	85 ca
110543	n-Hexane	29 (GW) nc	25 nc	24,000 nc
193395	Indeno(1,2,3-cd)pyrene	NA	NA	NA
67630	Isopropyl alcohol	1.2E+06 nc	9,900 nc	7,000 nc
98828	Isopropyl benzene	27 ca	3.8 (M) ca	81 ca
108101	4-Methyl-2-pentanone (MIBK)	4.6E+05 (EE) st	3,300 (EE) st	27,000 (EE) st
1634044	Methyl-tert-butyl ether (MTBE)	11,000 ca	74 (M) ca	3,300 ca
96377	Methylcyclopentane	130 nc	29 (M) nc	24,000 nc
75092	Methylene chloride	9,700 nc	130 nc	21,000 nc
91576	2-Methylnaphthalene	3,700 nc	1,700 nc	350 nc
91203	Naphthalene	210 ca	67 (M) ca	25 ca
109660	Pentane	48 (M) nc	36 (M) nc	35,000 nc
85018	Phenanthrene	530 nc	1,700 nc	3.5 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (CC) (J) ca	DATA	8.5 (J) ca
103651	n-Propylbenzene	11,000 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	2.5E+07 nc	3,500 nc
100425	Styrene	1,500 ca	150 ca	1,500 ca
630206	1,1,1,2-Tetrachloroethane	190 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	140 ca	2.7 (M) ca	15 ca
127184	Tetrachloroethylene	270 (EE) st	6.2 (M) (EE) st	1,400 (EE) st

Table 1. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **restricted** site-specific values apply to a residential structure that has a **slab-on-grade** foundation with an **elevator pit that extends 5 feet below grade**, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
109999	Tetrahydrofuran	1.4E+06 nc	13,000 nc	70,000 nc
108883	Toluene	60,000 nc	3,700 nc	1.7E+05 nc
87616	1,2,3-Trichlorobenzene	4,400 nc	840 nc	940 nc
120821	1,2,4-Trichlorobenzene	290 nc	53 (M) nc	70 nc
71556	1,1,1-Trichloroethane	23,000 (EE) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	22 nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	16 (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
75694	Trichlorofluoromethane	320 nc	19 (M) nc	15,000 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	7,700 nc	860 nc	6.6E+05 nc
540841	2,2,4-Trimethyl pentane	160 (GW) nc	130 (M) nc	1.2E+05 nc
526738	1,2,3-Trimethylbenzene	2,200 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	1,200 (JT) nc	150 (JT) nc	2,100 (JT) nc
108678	1,3,5-Trimethylbenzene	860 (JT) nc	100 (JT) nc	2,100 (JT) nc
75014	Vinyl chloride	2.3 (MM) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	3,200 (J) nc	280 (J) nc	7,600 (J) nc
115071	Propene	NR	NR	NR

Table 2. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **unrestricted** site-specific values apply to a residential house that has a **basement** foundation, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
83329	Acenaphthene	3,900 (S) sol	2.0E+05 nc	7,300 nc
208968	Acenaphthylene	65 (CC) nc	DATA	7,300 nc
67641	Acetone	2.3E+07 (EE) st	2.6E+05 (EE) st	1.0E+06 (EE) st
107131	Acrylonitrile	83 ca	1.2 (M) ca	12 ca
994058	t-Amyl methyl ether (TAME)	2,400 nc	34 (M) nc	2,200 nc
120127	Anthracene	43 (S) sol	1.3E+07 nc	35,000 nc
71432	Benzene	23 ca	1.7 (M) ca	110 ca
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut
205992	Benzo(b)fluoranthene	NA	NA	NA
207089	Benzo(k)fluoranthene	NA	NA	NA
191242	Benzo(g,h,i)perylene	NA	NA	NA
50328	Benzo(a)pyrene	NA	NA	NA
108861	Bromobenzene	2,200 nc	160 nc	2,100 nc
75274	Bromodichloromethane	40 ca	0.61 (M) ca	48 ca
75252	Bromoform	4,200 ca	45 (M) ca	770 ca
74839	Bromomethane	40 nc	0.90 (M) nc	350 nc
78933	2-Butanone (MEK)	2.8E+06 (DD) dev	31,000 (DD) dev	1.7E+05 (DD) dev
75650	t-Butyl alcohol	2.8E+05 nc	3,200 nc	2,500 nc
104518	n-Butylbenzene	1,300 nc	550 nc	7,000 nc
135988	sec-Butylbenzene	6,400 nc	3,800 nc	14 nc
98066	t-Butylbenzene	2.2 nc	0.64 (M) nc	14 nc
75150	Carbon disulfide	1,500 nc	52 (M) nc	24,000 nc
56235	Carbon tetrachloride	9.0 ca	0.31 (M) ca	150 ca
108907	Chlorobenzene	890 nc	82 nc	1,700 nc

Table 2. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **unrestricted** site-specific values apply to a residential house that has a **basement** foundation, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
75003	Chloroethane	11,000 nc	330 nc	1.4E+05 nc
67663	Chloroform	12 ca	0.26 (M) ca	37 ca
74873	Chloromethane	240 nc	6.9 (M) nc	3,100 nc
218019	Chrysene	NA	NA	NA
110827	Cyclohexane	1,700 nc	320 (M) nc	2.1E+05 nc
53703	Dibenzo(a,h)anthracene	NA	NA	NA
124481	Dibromochloromethane	37 (MM) mut	0.40 (MM) (M) mut	14 (MM) mut
96128	Dibromochloropropane	4.5E-04 (MM) (M) (CC) mut	DATA	6.2E-02 (MM) mut
95501	1,2-Dichlorobenzene	12,000 nc	1,500 nc	10,000 nc
541731	1,3-Dichlorobenzene	88 nc	10 (M) nc	100 nc
106467	1,4-Dichlorobenzene	200 ca	23 (M) ca	220 ca
75718	Dichlorodifluoromethane	47 nc	12 (M) nc	11,000 nc
75343	1,1-Dichloroethane	110 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	34 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	270 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	77 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	320 nc	12 (M) nc	2,800 nc
78875	1,2-Dichloropropane	70 nc	2.1 (M) nc	140 nc
542756	1,3-Dichloropropene	86 (J) ca	3.1 (M) (J) ca	210 (J) ca
60297	Diethyl ether	30,000 nc	350 nc	35,000 nc
108203	Diisopropyl ether	13,000 (DD) dev	190 (M) (DD) dev	23,000 (DD) dev
64175	Ethanol	9.9E+07 (EE) st	1.3E+06 (EE) st	6.3E+05 (EE) st
637923	Ethyl-tert-butyl ether (ETBE)	22 (CC) nc	DATA	13,000 nc
100414	Ethylbenzene	74 ca	12 (M) ca	340 ca

Table 2. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **unrestricted** site-specific values apply to a residential house that has a **basement** foundation, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
106934	Ethylene dibromide	5.2 ca	7.4E-02 (M) ca	1.4 ca
206440	Fluoranthene	NA	NA	NA
86737	Fluorene	1,700 (S) sol	4.7E+05 nc	4,900 nc
142825	n-Heptane	150 (GW) nc	130 nc	1.2E+05 nc
67721	Hexachloroethane	82 ca	3.2 (M) ca	85 ca
110543	n-Hexane	29 (GW) nc	25 nc	24,000 nc
193395	Indeno(1,2,3-cd)pyrene	NA	NA	NA
67630	Isopropyl alcohol	8.1E+05 nc	9,800 nc	7,000 nc
98828	Isopropyl benzene	17 ca	3.8 (M) ca	81 ca
108101	4-Methyl-2-pentanone (MIBK)	2.9E+05 (EE) st	3,300 (EE) st	27,000 (EE) st
1634044	Methyl-tert-butyl ether (MTBE)	6,600 ca	74 (M) ca	3,300 ca
96377	Methylcyclopentane	83 nc	29 (M) nc	24,000 nc
75092	Methylene chloride	6,200 nc	130 nc	21,000 nc
91576	2-Methylnaphthalene	2,300 nc	1,700 nc	350 nc
91203	Naphthalene	130 ca	67 (M) ca	25 ca
109660	Pentane	40 (M) (GW) nc	36 (M) nc	35,000 nc
85018	Phenanthrene	320 nc	1,700 nc	3.5 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (CC) (J) ca	DATA	8.5 (J) ca
103651	n-Propylbenzene	6,800 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	2.5E+07 nc	3,500 nc
100425	Styrene	920 ca	150 ca	1,500 ca
630206	1,1,1,2-Tetrachloroethane	120 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	85 ca	2.7 (M) ca	15 ca
127184	Tetrachloroethylene	160 (EE) st	6.2 (M) (EE) st	1,400 (EE) st

Table 2. Residential Part 201 SSVIAC or Part 213 VIAP STTLs. The following **unrestricted** site-specific values apply to a residential house that has a **basement** foundation, the depth to groundwater submitted for this site (i.e. 25 ft), and USDA soil type of **sand**.

CAS#	Hazardous Substance	Groundwater Not In Contact (µg/L)	Soil (µg/kg)	Soil Vapor** (µg/m^3)
109999	Tetrahydrofuran	8.9E+05 nc	13,000 nc	70,000 nc
108883	Toluene	37,000 nc	3,700 nc	1.7E+05 nc
87616	1,2,3-Trichlorobenzene	2,600 nc	830 nc	940 nc
120821	1,2,4-Trichlorobenzene	170 nc	53 (M) nc	70 nc
71556	1,1,1-Trichloroethane	14,000 (EE) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	14 nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	10 (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
75694	Trichlorofluoromethane	200 nc	19 (M) nc	15,000 nc
76131	1,1,2-Trichloro-1,2,2-trifluoroethane	4,600 nc	860 nc	6.6E+05 nc
540841	2,2,4-Trimethyl pentane	160 (GW) nc	130 (M) nc	1.2E+05 nc
526738	1,2,3-Trimethylbenzene	1,300 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	740 (JT) nc	150 (JT) nc	2,100 (JT) nc
108678	1,3,5-Trimethylbenzene	520 (JT) nc	100 (JT) nc	2,100 (JT) nc
75014	Vinyl chloride	1.5 (MM) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	2,000 (J) nc	280 (J) nc	7,600 (J) nc
115071	Propene	NR	NR	NR

FOOTNOTES

**Soil vapor site-specific volatilization to indoor air criteria (SSVIAC) are applicable for all depths.

- Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (**ca**) = Carcinogenetic; (**nc**) = Non-Carcinogenetic; (**dev**) = Developmental; (**mut**) = Mutagenic cancer; (**st**) = Short-term (i.e., less than chronic exposure).
- Footnote (**#**): Acceptable air concentrations (AAC) cannot be adjusted to a 12-hour exposure time for hazardous substance.
- Footnote **AA**: Health-based groundwater SSVIAC are not available due to insufficient toxicological data. Dissolved-phase methane in groundwater is not explosive; however, if liberated and allowed to accumulate in an enclosed structure the principle health and safety concerns are explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable groundwater concentration is the flammability and explosivity screening level (**FESL**) of 10,000 µg/L.
- Footnote **C**: The health-based SSVIAC exceeds the chemical-specific soil saturation screening level (**Csat**). Because this table does not list Csat values both were provided, with the calculated (health-based) value listed first and Csat provided in parenthesis. The person proposing or implementing response activity must document whether additional response activity is required to control non aqueous phase liquid (**NAPL**) to protect against risks associated with NAPL by using methods appropriate for the NAPL present.
- Footnote **CC**: Insufficient chemical-physical input parameters have been identified to allow the development of a health-based SSVIAC using standard methods. The health based SSVIAC for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.
- Footnote **DATA**: Insufficient physical chemical parameters to calculate a health based SSVIAC for specified media. If detections are present in specified media, health-based soil vapor SSVIAC should be used to evaluate risk.
- Footnote **DD**: Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- Footnote **EE**: The acceptable air concentration (**AAC**) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or EGLE's Air Quality Division acute initial threshold screening level (ITSL).
- Footnote **FF**: The AAC for the volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The short-term exposure for shallow groundwater health based SSVIAC are based on modification of the standard methods by the department to develop applicable shallow groundwater values.
- Footnote **GG**: Health-based SSVIAC for soil vapor are not available due to insufficient toxicological data. The soil vapor value addresses the health and safety concerns of explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable soil vapor concentration is derived based on 25% of the lower explosive level (**LEL**) for methane.
- Footnote **GW**: The calculated health based SSVIAC for a hazardous substance based upon shallow groundwater is considered protective when it is greater than the calculated value for groundwater.
- Footnote **ID**: Requires further evaluation to determine the appropriate media to sample.
- Footnote **J**: Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- Footnote **JT**: Hazardous substance may be present in several isomer forms. The health-based SSVIAC may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive health-based SSVIAC of the detected isomers.
- Footnote **M**: The health based SSVIAC may be below target detection limits (**TDL**). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.
- Footnote **MM**: Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
- Footnote **NA**: The hazardous substance does not meet the department's definition of a volatile; therefore, no health based SSVIAC were developed.
- Footnote **NR**: The hazardous substance has not been previously evaluated by the Remediation and Redevelopment Division Toxicology Unit. The identification, collection, and evaluation of toxicological literature and chemical-physical data cannot be completed within the timeframe requested.
- Footnote **S**: Calculated health-based SSVIAC exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway. When this occurs the basis for the screening level is noted as "sol".
- Footnote **TX**: The Remediation and Redevelopment Division Toxicology Unit has not identified an inhalation toxicity value for the hazardous substance.

Attachment IV

Previous Reports Excerpts

PM ENVIRONMENTAL | Environmental & Engineering Services

PHASE I ENVIRONMENTAL SITE ASSESSMENT

12 Vacant Land Parcels Along Michigan Avenue Between North Campbell Street and Wesson Street | Detroit, Michigan
PM Project Number 02-6927-0

Prepared for:

Southwest Housing Solutions Corporation
1920 25th Street, Suite A
Detroit, Michigan 48216

Prepared by:

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4080 West 11 Mile Road
Berkley, Michigan 48072

Michigan
Alabama
Florida
Illinois
Mississippi
New Jersey
North Carolina
Ohio
Tennessee

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APPENDICES

1.0 INTRODUCTION

This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-05* (ASTM Standard Practice E 1527-05).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF SOUTHWEST HOUSING SOLUTIONS CORPORATION, WHO MAY RELY ON THE REPORT'S CONTENTS.

PM acknowledges that this party may rely on the contents and conclusions presented in this report. Unless stated otherwise in writing, PM makes no other warranty, representation, or extension of reliance upon the findings of this report to any other entity or third party.

1.1: Property Overview

Subject Property Location/Address	12 Vacant Lot Parcels, located along Michigan Avenue, between North Campbell Street and Wesson Street, Detroit, Wayne County, Michigan
Number of Parcels and Acreage	12 parcels containing a combined total of approximately 2.43 acres
Number of Building(s) and Square Footage	None
Current Property Use	Vacant land with some limited parking by an adjoining property
Current Zoning	B4: General Business and R2: Two Family Residential

The subject property location is depicted on Figure 1, Site Location Map. A diagram of the subject property and adjoining properties is included as Figure 2, Generalized Diagram of the Subject Property and Surrounding Area. Photographs taken during the site reconnaissance are included in Appendix A.

1.2: Purpose and Scope of Services

The purpose of this Phase I ESA was to evaluate the current and historical conditions of the subject property in an effort to identify *recognized environmental conditions* (RECs) and *historical recognized environmental conditions* (HRECs) in connection with the subject property. This Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs and HRECs in connection with the subject property.

Acronyms and terms used in this report are described in Appendix F. Additionally, PM's scope of services is included in Appendix F.

1.3: Significant Assumptions

Pursuant to ASTM Standard Practice E 1527-05, PM assumes that the information provided by all sources and parties, including the User, is accurate and complete, except where obvious inconsistencies or inaccuracies were identified.

1.4: Limitations, Deviations, and Special Terms and Conditions

There are no deviations from the ASTM Standard. Non-ASTM Scope considerations are included in Section 10.0. Any physical limitations identified during the completion of this report are referenced in Section 7.0.

Due to changing environmental regulatory conditions and potential on-site or adjacent activities occurring after this assessment, the client may not presume the continuing applicability to the subject property of the conclusions in this assessment for more than 180 days after the report's issuance date, per ASTM Standard Practice E 1527-05.

To the best of PM's knowledge, no special terms or conditions apply to the preparation of this Phase I ESA that would deviate the scope of work from the ASTM Standard Practice E 1527-05.

PM was not provided with a copy of the recorded land title records for subject property by the client and was not requested to complete a title search. Therefore, PM cannot comment on any potential relevant information that may have been obtained through review of these records.

2.0 USER PROVIDED INFORMATION

The ASTM Standard defines a User as "the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager." The User has specific obligations for completing a successful application of this practice as outlined in Section 6 of the ASTM Standard Practice E 1527-05.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the User must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

The following responses were provided by the User. A copy of the completed User Questionnaire is included in Appendix B.

Question	Response
Name of Preparer and User Entity	Mr. Timothy Thomland, Southwest Housing Solutions Corporation
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?	No
Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	No

Question	Response
As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	Yes; developer and redeveloped east adjoining property (5716 Michigan Avenue)
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?	Yes
If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	Not applicable
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user:	
Do you know the past uses of the property?	Yes, see previous report provided to PM
Do you know of specific chemicals that are present or once were present at the property?	No
Do you know of spills or other chemical releases that have taken place at the property?	No
Do you know of any environmental cleanups that have taken place at the property?	Yes, see previous report provided to PM
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?	No

2.1: Recorded Land Title Records

PM was not provided with land title records for the subject property by the User and was not requested to complete a chain of title for the subject property. PM reviewed reasonably ascertainable environmental liens and activity and use limitation documents, which are further discussed in Section 4.10. Based upon the information reviewed as part of this Phase I ESA, PM has not identified the lack of provided land title records as a data failure that represents a significant data gap.

2.2: Reason for Performing this Phase I ESA

According to the User, this Phase I ESA was conducted as part of environmental due diligence related to purchasing the subject property.

3.0 PHYSICAL SETTING

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		SOURCE
Topography: Refer to Figure 1 for an excerpt of the Topographic Map		
Site Elevation	594 feet	United States Geological Survey Division (U.S.G.S.) 7.5-Minute Topographic Map of the Detroit, Michigan Quadrangle, 1968 (photo revised in 1973 and 1980)
Topographic Gradient	South-southwest	
Closest Surface Water	No surface water bodies are located within the immediate subject property area	
General Soil Characteristics: Refer to Appendix B for a copy of the soil survey map and soil type descriptions		
Soil Type	Not mapped	United States Department of Agriculture, Custom Soil Resource Report for Wayne County, Michigan (referenced October 2013)
Description	The subject property is located in an unmapped area. Not soil description, permeability, or corrosivity information was available.	
Area Specific Geology/Hydrogeology Characteristics:		
Geology	Generally consists of fill material with light brown sand or clay with varying amounts of silt, gravel, and masonry debris to a depth of 2.0 feet below ground surface (bgs) to 5.0 feet bgs, underlain by clay to a depth of 20.0 feet bgs, the maximum depth explored.	Previous site investigations for the subject property
Hydrogeology	No groundwater was encountered.	
Oil and Gas Wells:		
Current Oil and Gas Wells on Subject Property	None identified	MDEQ Geologic Survey Division (GSD) web site
Historical Oil and Gas Wells On Subject property	None identified	

4.0 RECORDS REVIEW

PM reviewed reasonably ascertainable records to identify obvious uses of the subject property from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. Reasonably ascertainable records reviewed as part of this Phase I ESA documented the use of the property back to 1884. Data failure occurred prior to that date. PM has identified this data failure as a significant data gap. Refer to Sections 6.0 and 11.1 for additional information.

4.1: Aerial Photographs and Sanborn Maps

PM reviewed reasonably ascertainable aerial photographs for the subject property area. The sources and years reviewed are identified in the table below. Relevant aerial photographs are included in Appendix B.

PM reviewed reasonably ascertainable Sanborn Fire Insurance Maps for the subject property area, which were obtained from EDR. The sources and years reviewed are identified in the table below. Relevant Sanborn Maps are included in Appendix B.

The following table summarizes the sources reviewed and the information obtained about the subject property from these sources. Information obtained about the adjoining properties from these sources is summarized in Section 8.0.

Aerial and Sanborn Summary for the Subject Property

Year and Source	Summary of Information
1884 Sanborn Map (EDR)	Sanborn Map was available, however, only provided coverage of a portion of the subject property. Depicted with a horse shed and associated barn and storage structures, bowling ally, a dwelling, and an additional building in the southeastern portion of the subject property, which is identified as "A.R. Sink's 3 Mile House".
1897 Sanborn Map (EDR)	The existing dwellings have been converted into a storefront and a hotel. Several additional dwellings and shed strictures have been constructed in the northern and eastern portions, and two storefronts have been constructed in the southern portion, along Michigan Avenue. Additionally, an ally is located in the northern portion of the subject property.
1910 Sanborn Map (EDR)	Two additional storefronts have been constructed along Michigan Avenue, and an additional dwelling has been constructed in the eastern portion of the subject property.
1924 Sanborn Map (EDR)	The former dwellings and structures in the northeastern portion have been demolished and a storefront and bowling ally building have been constructed. An additional dwelling has been constructed in the northwestern portion; an addition has been constructed to one of the storefronts in the western portion, which is depicted with photo operations; and an addition has been constructed to one of the storefronts in the eastern portion, which is depicted with vulcanizing operations. Lastly, a filling station has been constructed east of the vulcanizing building, and one gasoline UST is depicted east of the filling station.
1937 Aerial (EDR)	Due to scale and resolution definitive details could not be determined, however, similar to the previous aerial year.
1941 Sanborn Map (EDR)	An additional storefront, garage, and a greenhouse have been constructed in the western portion. The previously identified gasoline UST is no longer depicted, however, three gasoline USTs are depicted east of the filling station, north of the previously identified UST.
1949 Aerial (EDR)	Similar to the previous Sanborn year, however, the filling station appears to have been demolished. Additionally, a parking lot is located in the northwestern portion of the subject property.
1950 Sanborn Map (EDR)	Similar to the previous aerial year.
1952 Sanborn Map (EDR)	Similar to the previous Sanborn year.
1957 Aerial (EDR)	Two of the dwellings along North Campbell Street have been demolished and the area surrounding the bowling ally building is being used as a parking lot.
1957 Sanborn Map (EDR)	Similar to the previous aerial year, however, a garage has been constructed north of one of the storefronts. Additionally, the bowling ally building is depicted as a storefront.
1961 Aerial (EDR)	Similar to the previous Sanborn year.

Year and Source	Summary of Information
1961 Sanborn Map (EDR)	A storefront and garage have been demolished and a storefront and feed warehouse building have been constructed.
1972 Aerial (EDR)	Similar to the previous aerial year.
1978 Sanborn Map (EDR)	One of the dwellings along North Campbell Street has been demolished and a storefront, greenhouse, and several garages have been demolished in the western portion of the subject property.
1983 Sanborn Map (EDR)	Three of the storefronts in the western portion are depicted as having been demolished
1985 Aerial (EDR)	Similar to the previous Sanborn year, however, the western portion of the subject property along Wesson Street appears to be used as a parking area.
1986 Sanborn Map (EDR)	Similar to the previous aerial year.
1989 Sanborn Map (EDR)	One of the dwellings along North Campbell Street is depicted as having been demolished.
1992 Sanborn Map (EDR)	One of the dwellings along Wesson Street is depicted as having been demolished.
1993 Aerial (EDR)	Due to scale and resolution definitive details could not be determined, however, similar to the previous Sanborn year.
1996 Sanborn Map (EDR)	Similar to the previous aerial year.
1999 Aerial (EDR)	Similar to the previous Sanborn year.
2002 Sanborn Map (EDR)	The large storefront building (formerly identified as a bowling ally) is depicted as having been demolished.
2005 Aerial (EDR)	The remaining storefront and warehouse building along Michigan Avenue has been demolished.
2009 Aerial (EDR)	The remaining dwelling along North Campbell Street has been demolished.
2010 Aerial (EDR)	Similar to the previous aerial year.
2012 Aerial (EDR)	The remaining dwelling along Wesson Street has been demolished, and the subject property consists of vacant land with the paved ally located in the northern portion of the subject property. Similar to the current layout.

A historical summary of the information above is included in Section 6.0.

4.2: Local Street Directories

Reasonably ascertainable local street directories for Detroit, Michigan were researched. Directories were available from 1891 to 2013. Directories were researched in at least five-year increments, when available. It should not be construed that the earliest date represented is the initial date of occupancy.

The addresses in Detroit were renamed in approximately 1920, therefore, listings that do not include a range from 1891 to 1916 or 1921 to 2013 may have been listed as a different address that were listed as vacant, residential, or not listed within the city directories reviewed. Therefore, no listings are provided.

PM also reviewed listings for adjoining commercial properties. Information from the listings reviewed is included in Section 8.0.

Subject Property: 4000-4044 Wesson Street; 5800-5864 Michigan Avenue; and 3919-4007 North Campbell Street

Subject Property: 5800-5864 Michigan Avenue

5800 Michigan Avenue

2013-2004	Not Listed
2000	Paramount Supermarket
	Prince Valley Ford Center
1995	Paramount Supermarket
	Prince Valley Ford Center
	Western Union
1990-1978	Paramount Supermarket
	Prince Valley Ford Center
1973-1972	No Phone
1968-1967	A&P Food Stores
1964-1960	National Food Stores
1956-1946	Not Listed
1941-1936	Alcona Recreation Company
1931	Milady Hat Shop
1926	Granada Restaurant
1921	Residential
1916-1891	Not Listed

5848 Michigan Avenue

2013-1978	Not Listed
1973-1931	Ballaun Studio
1926-1921	Ziawinski, photographer
1916-1891	Not Listed

5850 Michigan Avenue

2013-1978	Not Listed
1973-1946	Polar Bear Café
1941-1936	Ponedelnik, beer garden
1931	Nigbor, pet shop
1926-1921	Residential
1916-1891	Not Listed

5858 Michigan Avenue

2013-1967	Not Listed
1964-1946	Residential
1941-1926	Sarnowski, florist

1921 Lawrence, florist
1916-1891 Not Listed

5862-5864 Michigan Avenue

2013-1978 Not Listed
1973-1972 Essential Laundry
Bright Cleaners
1968-1955 Bright Cleaners
1950-1946 Kosiba Office Supplies
1941-1931 Ursini, grocery
1926 Vacant
1921 Swiatkowski, grocery
1916-1891 Not Listed

Historical Subject Property: 478-498 Wesson Street; 1640-1666 Michigan Avenue; and 1265-1297 North Campbell Street

Historical Subject Property: 1640-1666 Michigan Avenue

1640 Michigan Avenue

2012-1921 Not Listed
1916-1911 Kock, saloon
Strinksky, barber
1906 Koch, sin
1902 Coopersmith, saloon
1897 Schulz, saloon
1892 Kock, grocer

1646 Michigan Avenue

2012-1921 Not Listed
1916 Stanley, sale stable
1911-1892 Not Listed

1648 Michigan Avenue

2012-1921 Not Listed
1916-1911 Levy, general store
1906 Korn, dry goods
1902-1892 Bauer, clothing

1650 Michigan Avenue

2012-1921 Not Listed
1916 Fryseko, art flowers
1911 Michigan Optical Parlors
1906 Reith, jeweler

1902	Rieth, jeweler
1897	Martyn, hardware
1892	Not Listed

1652 Michigan Avenue

2012-1921	Not Listed
1916	Ziawinkski, photo
1911	Vacant
1906	Behling, shoes
1902-1892	Not Listed

1662 Michigan Avenue

2012-1921	Not Listed
1916	Hausman, pool
1911	Bonkowski, dry goods
1906-1892	Not Listed

1666 Michigan Avenue

2012-1921	Not Listed
1916-1911	Karamon, grocery
1906	Sarbinowski's Hall
1902	Panter, saloon
1897	Lark, grocer
1892	Not Listed

The remaining addresses associated with the subject property were listed as vacant, residential, or were not listed within the city directories reviewed, therefore, no listings are provided.

A historical summary of the information above is included in Section 6.0.

4.3: Assessing Department

Reasonably ascertainable assessment information provided by the City of Detroit Assessing Department was obtained and reviewed. Assessing records document that the subject property consists of 12 parcels containing approximately 2.43 acres.

The table below documented the parcel address, year of construction, square footage, heat source, if a basement was present, and any additional information, if known/available. Additionally, PM was only able to review available records, therefore, all of the subject property parcels are not necessarily summarized. Copies of available assessment records for the subject property and the current legal description are included in Appendix B.

Assessing Department Information

Address	Structure	Year constructed	Heat source	Basement	Additional information
5800 Michigan Avenue	Store and loft	1914, additions in 1919 and 1923	Gas blower	Partial	Prince Valley Market 1976-1985; fire destroyed building 9/29/1999; permit to wreck and remove debris 6/20/2000
5840 Michigan Avenue	Store and flat	~1880, addition in 1961	Oil, gas burner	No	Pet supply store, 1961 addition was not heated or connected to plumbing
5848 Michigan Avenue	Store and flat	1905	Steam heat	Partial	Historically used as a dance studio/workshop; barn used as garage; permit to wreck and remove debris 2/28/1980
5850 Michigan Avenue	Store and bar	~1929	Steam heat	Partial	Polar Bear Bar/Jazz Shop; permit to wreck and remove debris 3-1983; vacant land in 8/1992
5858 Michigan Avenue	Store and flat	1890	Steam heat	Partial	Saranowski Greenhouse; permit to wreck and remove debris 1974
5862-5864 Michigan Avenue	Store	~1895	Steam heat	Yes	Bright Cleaners (no date); permit to wreck and remove debris 4/20/1983
3951 North Campbell Street	Dwelling	1900	Gas burner, stove	Partial	Permit to wreck and remove debris 6/22/1989
3957 North Campbell Street	Dwelling	1900	Gas burner	Partial	None
4007 North Campbell Street	Dwelling	1912	Oil burner, stove	Partial	None
4034-4038 Wesson Street	Dwelling	1913	Gas burner, steam heat	Partial	None
4040+4044 Wesson Street	Store and flat	~1910	Gas burner	Partial	Permit to wreck and remove debris 6/12/1990

PM has identified the former fuel oil use at the subject property parcels as a REC. Refer to Section 4.9 for additional information.

4.4: Building Department

PM reviewed City of Detroit Building Department records for the subject property. Building Department records document several permits regarding the construction, interior alterations, demolition, or repairs associated with several of the former dwellings and/or buildings. Specifically, Building records document the subject property was former occupied by a gasoline dispensing station in at least 1921 (located at 5828 Michigan Avenue), and an automotive service operation in at least 1956 and 1957 (located at 5842 Michigan Avenue). PM's review did not identify potential environmental concerns associated with the subject property. No other relevant information that would be considered as an environmental concern was identified within the Building Department files reviewed.

Additional information regarding the historic occupants and a summary of the previous reports completed at the subject property is included in Section 4.9.

PM also reviewed available City of Detroit Building and Safety Department Oil and Gas record cards, which documented there were at least three tanks used at the subject property associated with 5864 Michigan Avenue: two 220-gallon tanks located within a basement in at least 1950; and a 220-gallon tank associated with Bright Cleaners in at least 1953. Oil and Gas record cards did not indicate the contents of the tanks, or if they were stored within ASTs or USTs. The potential for former fuel oil use and associated USTs was identified as a REC in a previous report, however, was not adequately assessed. PM has identified this as a REC. Refer to Section 4.9 for additional information.

4.5: Fire Department

PM submitted a Freedom of Information Act (FOIA) request to the City of Detroit Fire Department to review Fire Department records for the subject property. Fire Department records document various inspections and minor code violations for the subject property from the 1970s until the 2000s. PM's review did not identify potential environmental concerns associated with the subject property. No other relevant information was included within the records reviewed.

4.6: Health Department

PM submitted a FOIA request to the City of Detroit Law Department to review Health Department records for the subject property. PM did not receive a response within the time constraints of this report. If PM does receive a response, and it changes the findings of the report, the client will be notified.

4.7: Utilities

4.7.1: Municipal Water/Water Wells

The subject property is not currently connected to municipal water, however, municipal water is available to the subject property. Review of Sanborn maps indicates municipal water has been available to the subject property since at least 1884. Based upon this information, the subject property was most likely connected to municipal water in at least 1884. PM was unable to determine of the subject property was connected to municipal water or private water wells prior to 1884. However, based on the lack of current use, PM has not identified the potential former private water wells as a REC.

4.7.2: Sanitary Sewer/Septic System

The subject property is not currently connected to municipal sewer, however, municipal sewer is available to the subject property. Review of Sanborn maps indicates municipal water has been available to the subject property since at least 1884. Municipal sewer has likely also been available since that time. Based upon this information, the subject property was most likely connected to municipal sewer in at least 1884. PM was unable to determine of the subject property was connected to municipal sewer or private septic systems prior to 1884. However,

based on the residential use of the properties during that time, PM has not identified the potential private septic fields as a REC.

4.7.3: Heat Source

The subject property is currently connected to natural gas, which is provided by MICHCON, a subsidiary of DTE Energy. According to a representative of MICHCON, no initial tap records were available for the subject property; however, review of MICHCON natural gas distribution maps indicates natural gas has been available to the subject property area since 1903. Based upon this information, the former dwellings and buildings were most likely heated with natural gas in at least 1903. PM was unable to determine the heat source used at the subject property prior to 1903.

Review of City of Detroit Building and Safety Department Oil and Gas records cards indicated at least three 220-gallon tanks of unknown contents (unknown if they were located above or underground) were located at 5864 Michigan Avenue in at least 1950 and 1953; a 220-gallon tank of unknown contents was located in the basement of 4007 North Campbell Street in at least 1951; and fuel oil was used as a confirmed heat source associated with both 5840 Michigan Avenue and 4007 North Campbell Street.

Based on review of the above records, the documented fuel oil use at two of the subject property parcels, and common use of fuel oil in the Detroit area, it is likely that fuel oil was used at each of the subject property parcels that were formerly developed with a dwelling or building. The potential for former fuel oil use and associated USTs was identified as a REC in a previous report, however, was not adequately assessed. PM has identified this as a REC. Refer to Section 4.9 for additional information.

4.8: Underground Storage Tank (UST) Systems

Review of reasonably ascertainable standard and other historical sources, and site observations, have not identified the current and historical presence of USTs on the subject property. Specifically, no records of USTs were identified though review of reasonably ascertainable records and PM did not observe any evidence of USTs (i.e. fill ports, vent pipes, etc.) during the site reconnaissance.

However, review of City of Detroit Assessing Department records and City of Detroit Building and Safety Department Oil and Gas records cards indicated at least three 220-gallon tanks of unknown contents (unknown if they were located above or underground) were located at 5864 Michigan Avenue in at least 1950 and 1953; a 220-gallon tank of unknown contents was located in the basement of 4007 North Campbell Street in at least 1951; and fuel oil was used as a confirmed heat source associated with both 5840 Michigan Avenue and 4007 North Campbell Street. PM has identified the known tanks and the potential for fuel oil USTs to be present at the subject property as RECs. Refer to Section 4.9 for additional information.

4.9: Previous Environmental Reports

PM reviewed a previous Phase I ESA completed for the subject property by Advanced Environmental Management Group (AEMG) and dated November 10, 2010. At the time of the Phase I ESA, the subject property was occupied by the remains of a fire-damaged residential dwelling (4034-4038 Wesson Street), with the remainder of the subject property consisting of vacant land with scattered debris throughout. AEMG documented similar historical information as included in this Phase I ESA, and the following RECs were identified: historic gasoline dispensing station, vulcanizing, greenhouse, dry cleaning, photo developing, and automotive parking operations; potential orphan USTs associated with the former gasoline dispensing station; potential fuel oil use; negative impact from potential chemicals associated with the fire at 4034-4038 Wesson Street; construction debris and materials throughout the vacant parcels; and historic operations associated with adjoining properties. AEMG recommended additional investigation be completed to assess the RECs identified within the Phase I ESA.

PM reviewed a previous Phase II ESA completed for the subject property by AKT Peerless (AKT) and dated January 7, 2011. The Phase II ESA evaluated the RECs identified in AEMG's Phase I ESA, and consisted of: (1) conducting a geophysical survey of the southern portion of the subject property, (2) advancing 12 soil borings, and (3) collecting 22 soil samples for laboratory analysis of volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), and polychlorinated biphenyls (PCBs), diesel range organics (DRO), gasoline range organics (GRO), herbicides, pesticides, and Michigan 10 Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc).

The geophysical survey identified an anomaly on the northwest portion of 5800 West Michigan Avenue. AKT concluded that the anomaly may be a potential former septic tank; however, this was not confirmed. In addition, the geophysical survey was conducted using electromagnetic (EM) induction, and not ground penetrating radar (GPR), which is a more accurate method.

Benzo(a)pyrene was detected in the soil sample collected from SB-12 at 2.0-4.0 feet below ground surface (bgs) advanced adjacent to the anomaly identified during the EM scan above Part 201 Residential Direct Contact (DC) cleanup criteria. In addition, concentrations of tetrachloroethylene were detected in the soil samples collected from SB-8, SB-9, and SB-10 advanced north of the former dry cleaners above Part 201 Residential and Nonresidential Drinking Water Protection (DWP) and Groundwater Surface Water Interface Protection (GSIP) cleanup criteria. Based on the presence of tetrachloroethylene north of the former dry cleaners, higher concentration may exist closer to the former dry cleaning operations.

PM has identified the following deficiencies that represent RECs:

- The previous report identified the potential for former fuel oil use and associated USTs as a REC. Additionally, the potential for fill materials used associated with the former buildings and dwellings was identified as a REC. No subsurface investigations including a geophysical survey was conducted in the central and northern portions of the subject property to assess potential fill material within former basements and potential orphan USTs and/or fuel oil use. **The potential exists for contamination to be present in these areas and/or for orphan tanks to be present, which represents a REC.**

- The previous subsurface investigation was not adequate to assess the former vulcanizing operations, gasoline dispensing operations, and former dry cleaning operations. In addition, no further assessment of the anomaly (most likely associated with an orphan UST) was conducted. PM has identified the lack of GPR survey as a deficiency. **The potential exists for additional contamination that was not previously assessed to be present in these areas, which represents a REC.**

Copies of the previous reports reviewed are included in Appendix C.

4.10: Environmental Liens, Activity and Use Limitations, and Government Institutional and Engineering Controls

PM has not identified any record of environmental liens, activity and use limitations, or institutional controls or engineering controls associated with the subject property through review of reasonable ascertainable records.

5.0 INTERVIEWS

The objective of completing interviews with knowledgeable site contacts is to obtain information about the uses and physical characteristics of the property. In general, interviewees supported the information reviewed from other historical sources (i.e. aerial photos, city records, etc.).

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner	No	Multiple entities	Not Given	PM was unable to interview a representative of the current owner during the course of this report. However, based on review of other historical sources and previous interviews conducted which were included within previous reported completed at the subject property, PM has not identified the lack of current owner interview as a significant data gap. Refer to Section 4.9 for a summary of the previous reports completed for the subject property.
Former Property Owner	No	Not applicable	Not applicable	Contact information for the former owner was not reasonably ascertainable or provided by the User
Key Site Manager	No	Not applicable	Not applicable	The subject property currently consists of vacant land, therefore, a key site manager was not available for interview.

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Occupant(s)	No	Not applicable	Not applicable	The subject property currently consists of vacant land, therefore, a current occupant was not available for interview.
Former Occupant(s)	No	Not applicable	Not applicable	Contact information for the former occupants was not reasonably ascertainable or provided by the User
Other(s)	No	Not applicable	Not applicable	No other relevant interviews were conducted as part of this Phase I ESA.

6.0 SUMMARY OF HISTORICAL USE

Standard and other historical sources were able to document the first developed use of the subject property occurred prior to 1884 with a hotel and associated outbuilding in the southeastern portion and a dwelling in the south-central portion. Additional storefronts, dwellings, and buildings were constructed until approximately 1961, and all structures were demolished between the 1960s and 2000s, and the property has consisted of vacant land or has been used for limited parking by an adjoining property since that time. The subject property was former occupied by gasoline dispensing station, vulcanizing, automotive repair, and dry cleaning operations, and was historically occupied by various commercial land/or retail businesses or used for residential purposes.

Refer to Section 4.9 for a summary of the previous reports completed for the subject property.

7.0 SUBJECT PROPERTY RECONNAISSANCE

Reconnaissance Information	
PM Field Personnel:	Ms. Katie Ward
Site Reconnaissance Date:	November 6, 2013
Weather Conditions:	55° and rainy
Escort:	None
Limitations:	Observations limited by overgrown vegetation in the northern portion of the subject property.

7.1: Subject Property Observations

The subject property current consist of vacant land, with overgrown vegetation located in the northern portion, and a small gravel parking area located in the western portion, along Wesson Street. Additionally, a paved ally is located in the northern portion of the subject property, extending from North Campbell Street to Wesson Street.

During the site reconnaissance, the southeastern portion of the subject property was being used as an overflow parking area associated with the east adjoining property.

The following table summarizes the site observations. Affirmative responses are discussed in more detail following the table.

Category	Feature	Observed
Interior Equipment	Elevators	No
	Air Compressors	No
	Incinerators	No
	Waste Treatment Systems	No
	Presses/Stamping Equipment	No
	Press Pits	No
	Hydraulic Lifts or In-ground hoists	No
	Paint Booth	No
	Plating Tanks	No
	Lathes, Screw Machines, etc.	No
Aboveground Chemical or Other Waste Storage or Waste Streams	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > 5 gallons	No
	Chip Hoppers	No
	Hazardous or Petroleum Waste Streams	No
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground Storage Tanks	No
	Fuel Dispensers	No
	Sumps or Cisterns	No
	Dry Wells	No
	Oil/Water Separators	No
	Floor Drains, Trench Drains, etc.	No
	Pipeline Markers	No
Exterior Observations	Stressed Vegetation	No
	Stained Soil or Pavement	No
	Monitoring Wells	No
	Pad or Pole Mounted Transformers and/or Capacitors	No
	Soil Piles of Unknown Origin	No
	Exterior Dumpsters with Staining	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	Yes
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Storm water retention or detention ponds	No
	Pits, Ponds, Lagoons	No

Trash, Debris, and/or Other Waste Materials: PM observed general refuse and debris located throughout the subject property. No staining was observed associated with any of the materials, therefore, PM has not identified these materials as a REC.

7.1.1: Current Operations

The subject property is currently unoccupied and therefore there are no current business operations, with the exception of some limited parking by the adjoining property in the southeastern portion of the subject property.

8.0 ADJOINING PROPERTIES

The following paragraphs provide information about the adjoining properties obtained during the site reconnaissance and through review of reasonably ascertainable information.

North Adjoining Properties

The north adjoining properties are occupied by residential dwellings. Review of historical sources indicates the properties are current or have historically been used for residential purposes or have consisted of vacant land since at least 1897.

East Adjoining Properties, across North Campbell Street

The east adjoining property, identified as 5700-5748 Michigan Avenue, is occupied by Convenant Community Center. Review of historical sources indicates the property was developed prior to 1897 with a storefront. An additional storefront and dwelling were constructed between 1897 and 1910, and between 1910 and 1924, an additional storefront was constructed in the western portion; a portion of the current building was constructed as a manufacturing building; and a factory building was constructed in the central and eastern portions of the property. The eastern factory building was demolished between 1961 and 1978, and the remaining dwelling and buildings were demolished in the 1990s. A portion of the current building was demolished and the current western portion of the building was constructed between 2010 and 2012. The property was historically occupied by various manufacturing operations from at least 1910 until at least 1926, and various restaurants, commercial and retail businesses, a furniture business and warehouse, an automotive repair operation, and a music school, and has been occupied by a medical center and offices since approximately 2010. The regulatory database has identified this property as a US Brownfield site and a BEA site. Refer to Section 9.2 for additional information.

The remaining east adjoining properties are occupied by residential dwellings. Review of historical sources indicates the properties are current or have historically been used for residential purposes or have consisted of vacant land since at least 1897.

South Adjoining Properties, across Michigan Avenue

The southeast adjoining property, identified as 5715 Michigan Avenue, is occupied by Social Services Administration. Review of historical sources indicates the property was developed prior to 1897 with multiple dwellings. A storefront was constructed in the eastern portion between 1897 and 1910, and the entire property was developed with several storefronts, a filling station, a theatre, and a bakery between 1910 and 1924. The filling station was removed and a storefront was constructed in its former footprint. The bakery building was demolished between 1961 and 1972, and the remaining buildings were demolished between 1983 and 1985. The property was used as a parking lot until the construction of the current building between 1999 and 2002. The property was historically occupied by various storefronts, retail and commercial businesses, restaurants, a theatre, a grocery store, and professional offices, and has been occupied by professional offices since at least 2002. Additionally, the property was occupied by a gasoline dispensing station in at least 1924. Based on the regional clay geology, lack of groundwater to act as a transport mechanism, and redevelopment of the property and limited time frame the property was occupied by gasoline dispensing operations, PM has not identified this property as a REC.

The south adjoining property, identified as 5831-2833 Michigan Avenue, is occupied by Michigan Animal Hospital. Review of historical sources indicates the property was developed between 1910 and 1921 with a portion of the current building, on previously vacant land. A portion of the building was demolished between 1924 and 1941. The property was historically occupied by various storefronts, a sewing machine company, and an animal hospital since at least 1921. No historical dry cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

The south adjoining property, identified as 5837-5845 Michigan Avenue, consists of vacant land. Review of historical sources indicates the property was developed between 1910 and 1924 with three storefronts, on previously vacant land. Two of the storefronts were demolished between 1924 and 1941, and the remaining storefront was demolished between 1941 and 1949. The property has been used as a parking lot or has consisted of vacant land since that time. The property was historically occupied by various storefronts and commercial businesses, and has consisted of vacant land since at least the 1940s. No historical dry cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

The south adjoining property, identified as 5847-5849 Michigan Avenue, is occupied by a vacant commercial building. Review of historical sources indicates the property was developed prior to 1884 with a portion of a building containing a blacksmith shop and shed. The building was demolished and the property consisted of vacant land until the construction of the current building between 1910 and 1924. The property has historically been occupied by a grocery store and various storefronts, commercial businesses and restaurants since at least 1926. No historical dry cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

The south adjoining property, identified as 5855-5861 Michigan Avenue, consists of vacant land. Review of historical sources indicates the property was developed prior to 1884 with a portion of a building containing a blacksmith shop and shed. The building was demolished and the property consisted of vacant land until the construction of a gasoline dispensing station and light industrial building between 1910 and 1924. The light industrial building was demolished and the gasoline dispensing station was redeveloped between 1924 and 1941. The gasoline dispensing station was demolished and the property was developed with a storefront between 1952 and 1957. The building was demolished between 1983 and 1985, and the property has consisted of vacant land since that time. The property was historically occupied by a gasoline dispensing and/or service station from at least 1921 until 1952, a car wash from 1955 until 1976, various commercial or retail businesses from 1961 until at least 1976, and has consisted of vacant land since that time. No historical dry cleaning operations have been identified associated with this property through review of reasonable ascertainable information. Based on the regional clay geology, and lack of sufficient groundwater to act as a transport mechanism, PM has not identified this property as a REC.

The southwest adjoining property, identified as 5901-5931 Michigan Avenue, is occupied by Prince Valley Supermarket. Review of historical sources indicates the property was developed prior to 1884 with two storefronts and two shed structures. Additional storefronts, dwellings, and shed structures were constructed between 1884 and 1897. A parking garage was constructed in the eastern portion of the property between 1910 and 1924, and between 1924 and 1941, several buildings were demolished. The dwellings and an additional building was demolished and the current building was constructed 1959. The remaining buildings were demolished between 2012 and 2013. The property was occupied by a lumber or coal and/or cinder storage yard from at least 1910 until approximately 1959, a printing operations in at least 1924, a lumber company from 1941 until 1949, various bars, warehousing operations, and party stores from the 1950s until the 2000s, and has been occupied by a grocery store since 1959. No historical dry cleaning operations have been identified associated with this property through review of reasonable ascertainable information. The regulatory database has identified this property as a BEA site. Refer to Section 9.2 for additional information.

West Adjoining Properties, across Wesson Street

The west adjoining property, identified as 5900 Michigan Avenue, is occupied by a residential apartment building. Review of historical sources indicates the property was developed prior to 1884 with at least one residential dwelling. The dwelling was demolished between 1884 and 1897, and the property consisted of vacant land until the construction of the current residential apartment building between 1924 and 1935. The property has been used for residential purposes since at least 1884. Additionally, a storefront space was occupied by a grocery store from 1935 to 1946, a tire store from 1949 to 1952, and a furniture store from 1955 to 1961. No historical dry cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

The remaining west adjoining properties are occupied by residential dwellings. Review of historical sources indicates the properties are current or have historically been used for residential purposes or have consisted of vacant land since at least 1897.

9.0 REGULATORY RECORDS REVIEW

PM retained EDR to provide current regulatory database information compiled by a variety of federal and state regulatory agencies. A copy of the complete database is included in Appendix D. The following information was obtained.

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	National Priority List (NPL) Sites	1 mile	0
Federal	Delisted National Priority List (DNPL) Sites	½ mile	0
Federal	Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Sites	½ mile	1
Federal	CERCLIS No Further Remediation Action Planned (NFRAP) Sites	subject property and adjoining properties	0
Federal	Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Sites	1 mile	1

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	RCRA non-CORRACTS Treatment, Storage or Disposal (TSD) Sites	½ mile	0
Federal	RCRA Large Quantity Generators (LQG) Sites	subject property and adjoining properties	0
Federal	RCRA Small Quantity Generators (SQG) Sites	subject property and adjoining properties	0
Federal	RCRA Conditionally Exempt Small Quantity Generators (CESQG) Sites	subject property and adjoining properties	0
Federal	RCRA Non-Generators (NON-GEN) Sites	subject property and adjoining properties	0
Federal	US Brownfield Sites	½ mile	3
Federal	Institutional Control / Engineering Control Registries	subject property	0
Federal	Environmental Response and Notification System (ERNS)	subject property	0
State & Tribal	Hazardous Waste Sites (HWS) (equivalents to NPL and CERCLIS)	1 mile	2
State & Tribal	Delisted Hazardous Waste Sites (HWS)	1 mile	0
State & Tribal	Solid Waste Facilities/Landfill Sites (SWLF)	½ mile	0
State & Tribal	Historical Landfill Sites (HIST LF)	½ mile	0
State & Tribal	Leaking Underground Storage Tank (LUST) Sites	½ mile	7
State & Tribal	Registered Underground Storage Tank (UST) Sites	subject property and adjoining properties	0
State & Tribal	Institutional Control / Engineering Control Registries	subject property	0
State & Tribal	Brownfield Sites	½ mile	2
State	Baseline Environmental Assessment (BEA) Sites	½ mile	11
Either	Unmappable Database Listings (a.k.a. Orphan Sites)	database-dependent	20

9.1: Subject Property and Occupant Listings

The subject property or its known occupants are not identified in the referenced databases. However, the subject property is listed as a US historic auto station in at least 1940 and a US historic dry cleaner in 1956, 1965, and 1970. Refer to Section 4.9 for a summary of the previous reported completed at the subject property.

9.2: Adjoining and Nearby Sites

PM's review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present an environmental risk to the subject property, PM considered the following criteria:

- The type of database on which the site is identified.
- The topographic position of the identified site relative to the subject property.
- The direction and distance of the identified site from the subject property.
- Local soil conditions in the subject property area.
- The known or inferred groundwater flow direction in the subject property area.
- The status of the respective regulatory agency-required investigation(s) of the identified site, if any.
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) located between the identified site and the subject property.

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional clarification are further evaluated. Using the referenced criteria, and based upon a review of readily available information contained within the regulatory database report, PM did not identify adjoining (i.e., bordering) or nearby sites (e.g., properties within a ¼-mile radius) listed in the regulatory database report that were judged to present a potential environmental risk to the subject property, with the exception of the following:

Pitstop 1-Fill-Up – This property is identified as 5938 Michigan Avenue, and is located within one-eight of a mile southwest of the subject property. The regulatory database has identified this property as an open LUST site with one release reported in 2003 and a MI Brownfield site. PM reviewed available MDEQ file information, which included documentation that a release was confirmed in August 2003. No additional information was available within the records reviewed. Based on the regional clay geology, lack of groundwater to act as a transport mechanism, and distance from the nearest former UST basin subject property, approximately 180 feet and across Wesson Street, PM has not identified this property as a REC.

Olympic Steel, Inc. – This property is identified as 3600 Military Street, and is located within one-eighth of a mile southwest of the subject property. The regulatory database has identified this property as an open LUST site with one release reported in 1990. Review of the UST closure report for the property indicates the impacted soils were excavated and the soil in the area is composed of clays to a depth of 12 feet bgs with no groundwater encountered. Based on the excavation of the impacted soils, regional clay geology, lack or groundwater to act as a transport mechanism, and distance of the building from the subject property, approximately 480 feet and across Michigan Avenue, PM has not identified this property as a REC.

Michigan and 35th Street & 5716 Partners, LLC – This property is identified as 5700-5728 Michigan Avenue and 5728 Michigan Avenue/3837 35th Street, and is the east adjoining property. The regulatory database has identified this property as a US Brownfield site and a BEA site. PM reviewed the 2009 BEA completed to assess former factory and manufacturing operations, and automotive repair and dry cleaning operations; and dry cleaning operations at a north adjoining property. Analytical results indicate soil contamination was detected above MDEQ Part 201 Drinking Water Protection (DWP) Generic Cleanup Criteria (GCC), Groundwater Surface Water Interface Protection (GSIP) GCC, and Direct Contact (DC) GCC. No groundwater was encountered. Based on the regional clay geology, and lack of groundwater to act as a transport mechanism, PM has not identified this property as a REC.

Prince Valley Real Estate Property – This property is identified as 5931 Michigan Avenue, and is located within one-eighth of a mile southwest of the subject property. The regulatory database has identified this property as a BEA site. PM reviewed the 2013 BEA completed to assess known soil contamination identified in a 2010 subsurface investigation; former coal/cinder/coke storage, printing operations, automotive wrecking and repair operations; and former gasoline dispensing and/or service operations at adjoining properties to the north and east. Analytical results indicate soil contamination was detected above MDEQ Part 201 Groundwater Contact Protection (GCP) GCC, Volatile Soil Inhalation (VIS) GCC, DWP GCC, GSIP GCC, and DC GCC. No groundwater was encountered. Based on the regional clay geology, and lack of groundwater to act as a transport mechanism, PM has not identified this property as a REC.

Voyageur Academy – This property is identified as 6013 and 6101 Buchanan, and is located within one-eighth of a mile west-northwest of the subject property. The regulatory database has identified this property as a BEA site. PM reviewed the 2010 BEA completed to assess former automotive repair, industrial, and lumber and coal storage operations, former railroad tracks, former USTs, debris piles observed during a Phase I ESA, and potential fill associated with former buildings. Analytical results indicate soil contamination was detected above MDEQ Part 201 Soil Volatilization to Indoor Air Inhalation (SVII) GCC, DWP GCC, GSIP GCC, and DC GCC. Based on the regional clay geology, lack of groundwater to act as a transport mechanism, and distance from the subject property, at least 370 feet and across Wesson Street and Joe Street, PM has not identified this property as a REC.

10.0 NON-ASTM SCOPE CONSIDERATIONS

PM has included a discussion of Non-ASTM Scope Considerations based upon industry standards and lender requirements.

Non-ASTM Item	Observations or Information
Potential Asbestos Containing Building Materials (ACBM)	Not applicable since no buildings or structures are present.
Lead Based Paint	
Visual Mold or Significant Moisture Damage	

11.0 FINDINGS, OPINIONS AND CONCLUSIONS

11.1: Significant Data Gaps

PM did not identify or encounter any instances of <u>significant</u> data gaps during the course of this ESA.

11.2: Recognized Environmental Conditions (RECs)

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-05 of the 12 Vacant Land Parcels located off Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Wayne County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except the following:

- Previous reports completed for the subject property in 2010 and 2011 identified the potential for former fuel oil use and associated USTs as a REC. Additionally, the potential for fill materials used associated with the former buildings and dwellings was identified as a REC. No subsurface investigations including a geophysical survey was conducted in the central and northern portions of the subject property to assess potential fill material within former basements and potential orphan USTs and/or fuel oil use. The potential exists for contamination to be present in these areas and/or for orphan tanks to be present.

- The previous subsurface investigation completed by AKT for the subject property in 2011 was not adequate to assess the former vulcanizing operations, gasoline dispensing operations, and former dry cleaning operations. In addition, no further assessment of an anomaly (most likely associated with an orphan UST) detected through a geophysical survey using EM induction, in the northwest portion of 5800 Michigan Avenue, was conducted. The potential exists for additional contamination that was not previously assessed to be present in these areas.

No adjoining and/or nearby RECs have been identified.

11.3: Historical Recognized Environmental Conditions (HRECs)

A historical REC, as defined in the ASTM Standard, is an environmental condition that in the past would have been identified as a REC, but which may or may not be considered a REC currently. PM has not identified any historical RECs in association with the subject property.

11.4: De Minimis Conditions

De minimis conditions are conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions determined to be de minimis are not recognized environmental conditions. No de minimis conditions were identified during completion of this report.

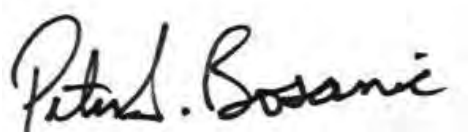
11.5: Recommendations

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-05 of the 12 Vacant Land Parcels located off Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Wayne County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except as listed in Section 11.2 of this report.

Verification of the presence or absence of contaminants potentially associated with these RECs may be determined through a Phase II investigation at the request of the client. Cost/risk analysis decisions associated with further investigation of these conditions are the decision of the client.

12.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.



Peter S. Bosanic, P.E.
Founder and Principal

13.0 REFERENCES

The following published sources were utilized during completion of this Phase I ESA:

- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* ASTM, ASTM Designation E 1527-05, Published November 2005.

- Bresser's Cross-Index City Directories, Bresser's in Detroit, Michigan. City: Detroit. Years: 1946-2013.

- R.L. Polk's Directories, obtained from the State of Michigan Library in Lansing, Michigan. City: Detroit. Years: 1891-1941.

- Phase I ESA, November 10, 2010, Advanced Environmental Management Group (AEMG).

- Phase II ESA, January 7, 2011, AKT Peerless.

- United States Geological Survey Division (U.S.G.S.) 7.5 Minute Topographic Map Detroit, Michigan Quadrangle, 1968 (photo-revised 1973 and 1980).

- *Custom Soil Resource Report for Wayne County, Michigan*, U.S. Department of Agriculture, referenced October 2013.

#	CURRENT ADDRESSES	PARCEL ID #
1	5862 MICHIGAN AVENUE	16001701
2	5858 MICHIGAN AVENUE	16001702
3	5850 MICHIGAN AVENUE	16001703
4	5848 MICHIGAN AVENUE	16001704
5	5840 MICHIGAN AVENUE	16001705
6	5800 MICHIGAN AVENUE	16001706-8
7	3951 NORTH CAMPBELL STREET	16014695
8	3957 NORTH CAMPBELL STREET	16014694
9	4007 NORTH CAMPBELL STREET	16014693
10	4028 WESSON STREET	16015321
11	4034 WESSON STREET	16015322
12	4040 WESSON STREET	160115323

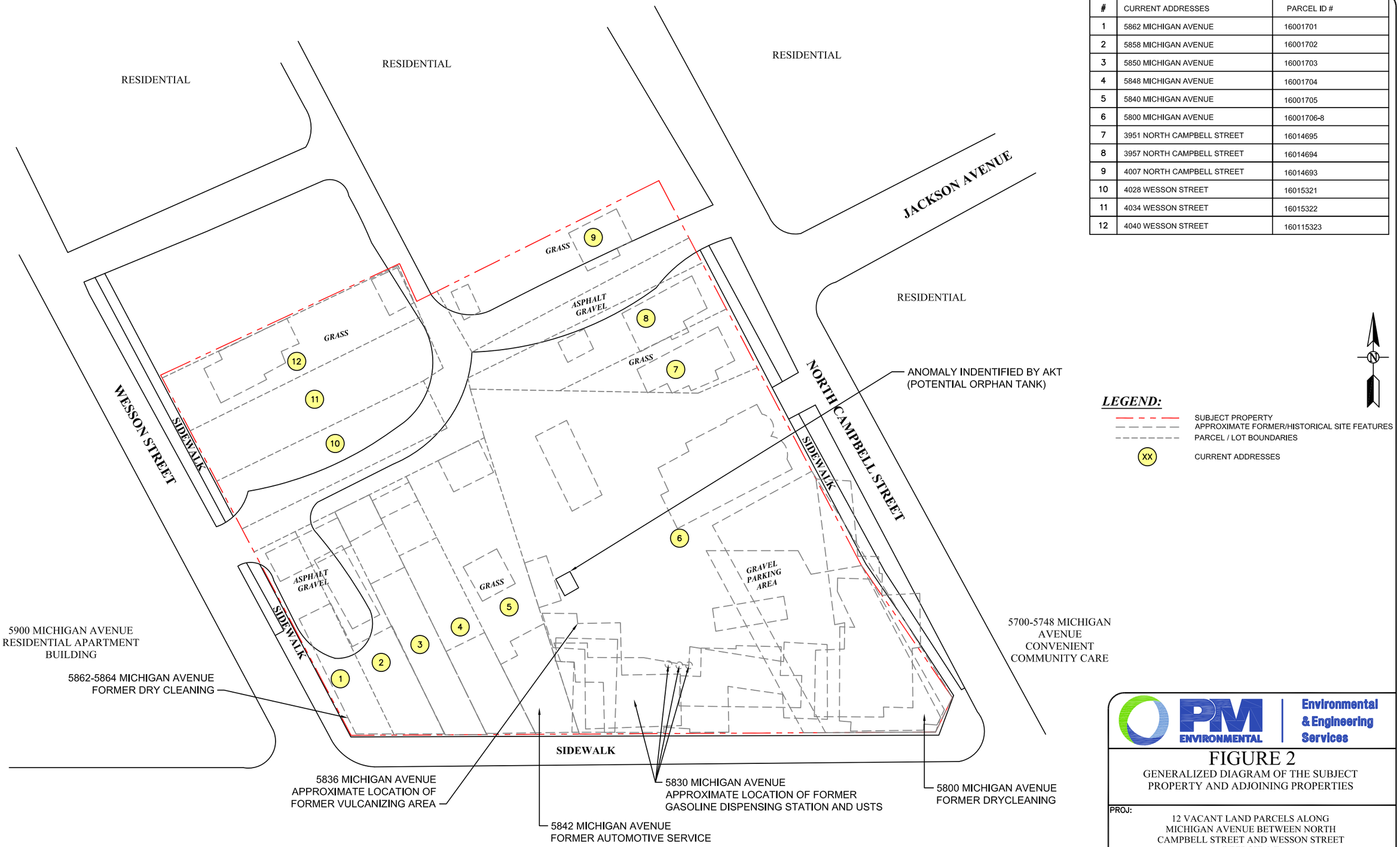


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FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

PROJ:
12 VACANT LAND PARCELS ALONG MICHIGAN AVENUE BETWEEN NORTH CAMPBELL STREET AND WESSON STREET
DETROIT, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 50'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: MM
CHKD BY: KW
DATE: 11/22/2013
SCALE: 1" = 50'
FILE NAME: 02-6927-0F02R00

Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 1

Northern portion of the subject property.

Photograph 2

Northeastern portion of the subject property.

Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 3

Northwestern portion of the subject property.

Photograph 4

Southern portion of the subject property.

Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 5

Southwestern portion of the subject property.

Photograph 6

View of the general refuse and debris located in the eastern portion of the subject property.

Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 7

Typical north adjoining properties, residential dwellings.

Photograph 8

East adjoining property, Convenant Community Center.

Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 9

Southeast adjoining property, Social Services Administration.

Photograph 10

South adjoining property, Michigan Animal Hospital.

Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 11

South adjoining vacant commercial building.

Photograph 12

Southwest adjoining property, Prince Valley Supermarket.

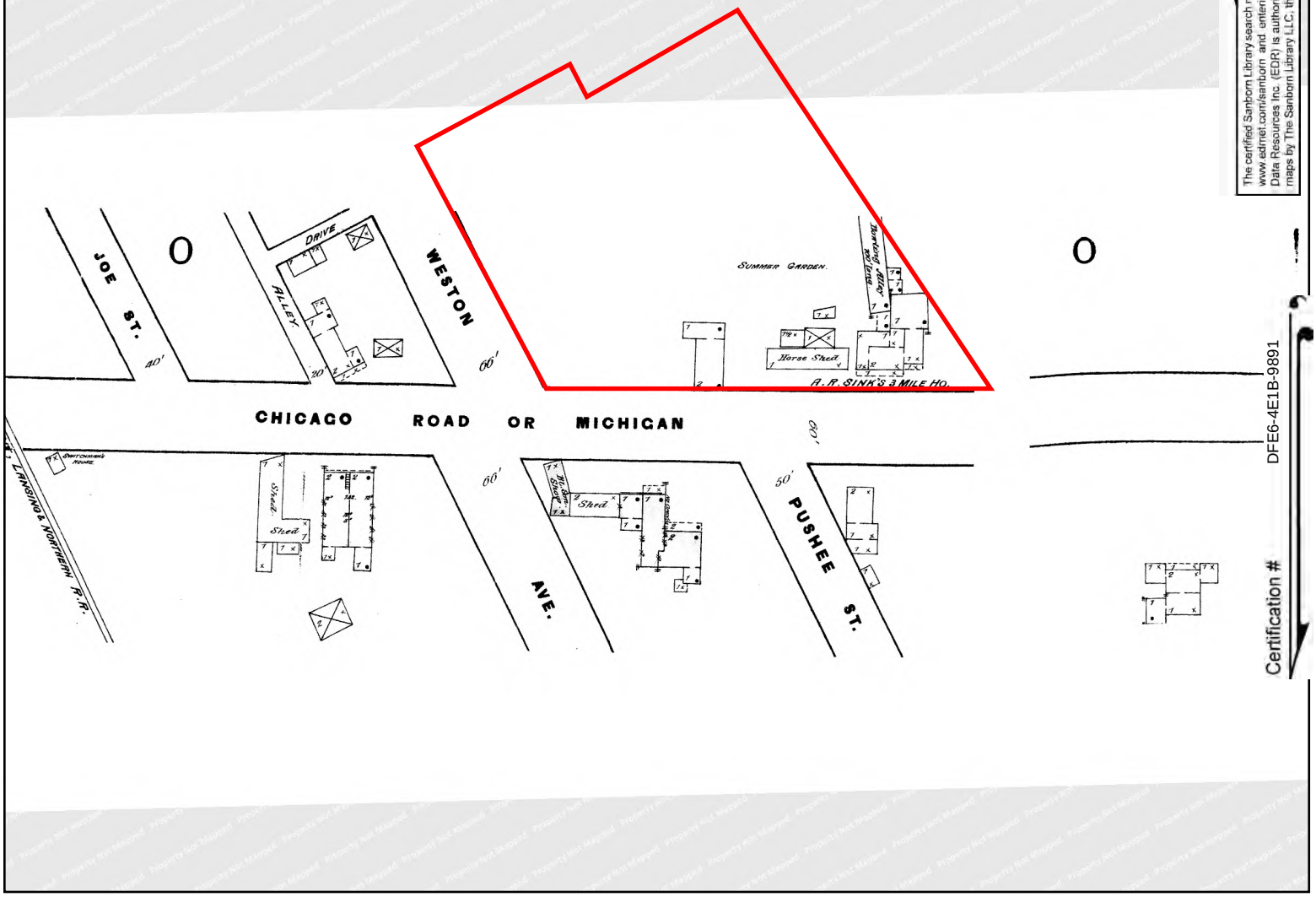
Photographs From Site Reconnaissance
PM Project No. 02-6927-0
Location: 12 Vacant Land Parcels along Michigan Avenue between North Campbell Street and Wesson Street, Detroit, Michigan

Photograph 13

West adjoining property, residential apartment building.

1884 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 1884



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Outlined areas indicate map sheets within the collection.

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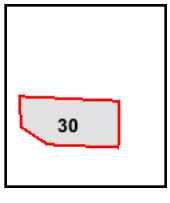

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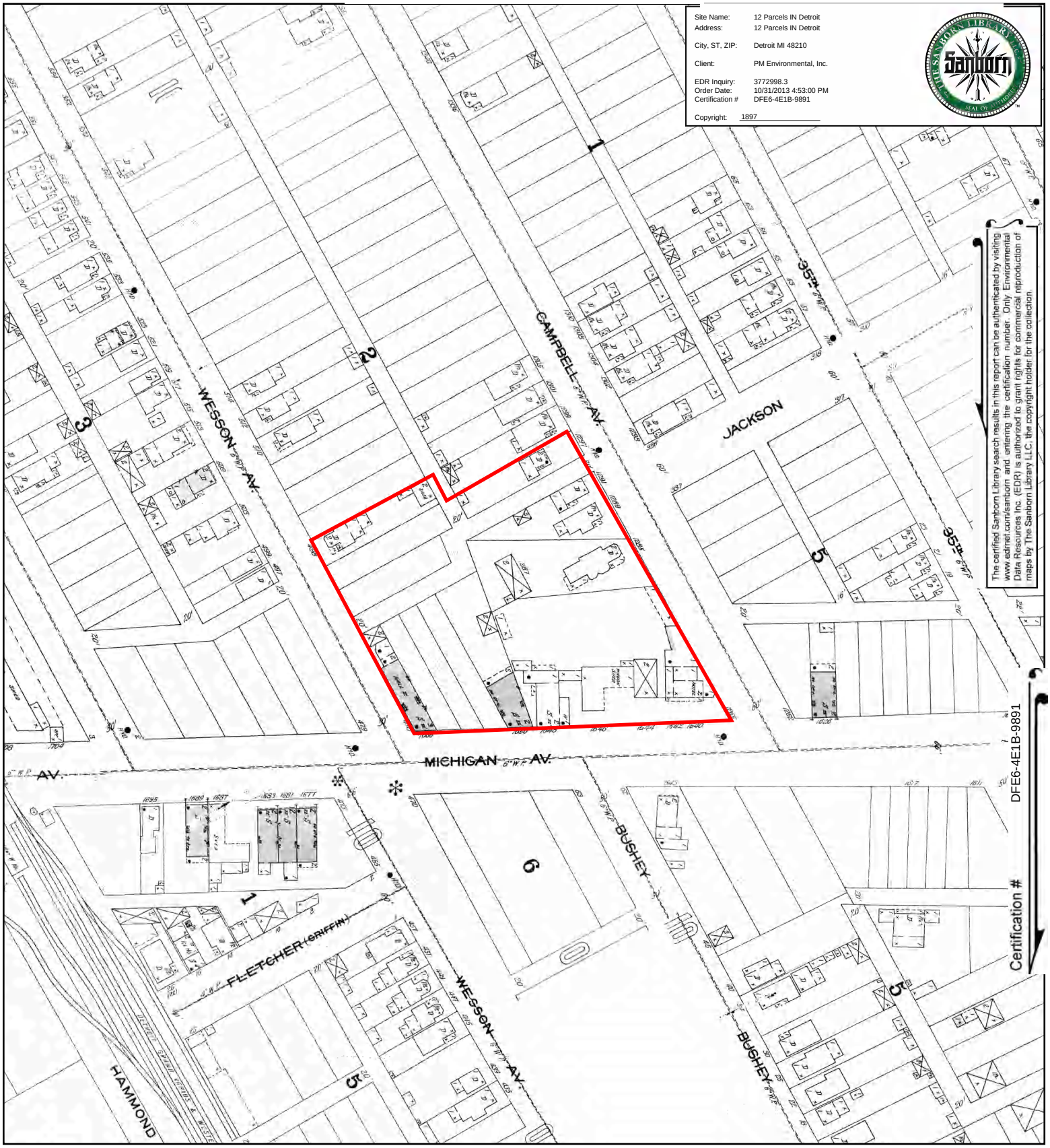

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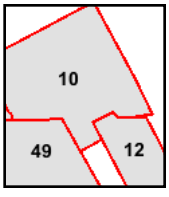

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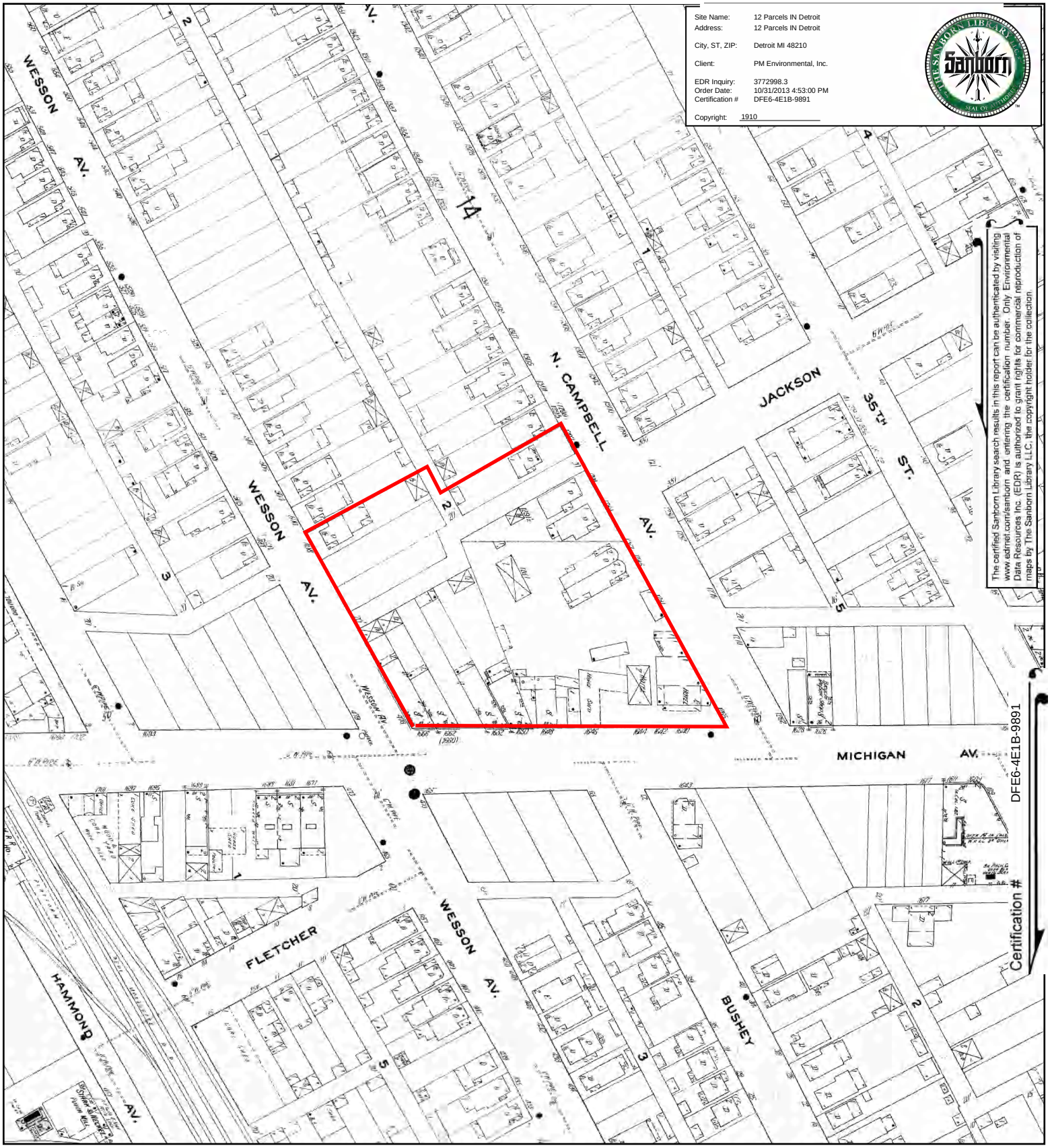
Volume 5, Sheet 12
Volume 5, Sheet 49

N

1910 Certified Sanborn Map



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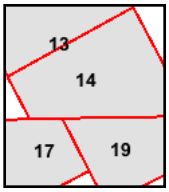

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Volume 5, Sheet 17
Volume 5, Sheet 19

N

1924 Certified Sanborn Map

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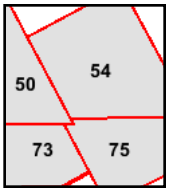

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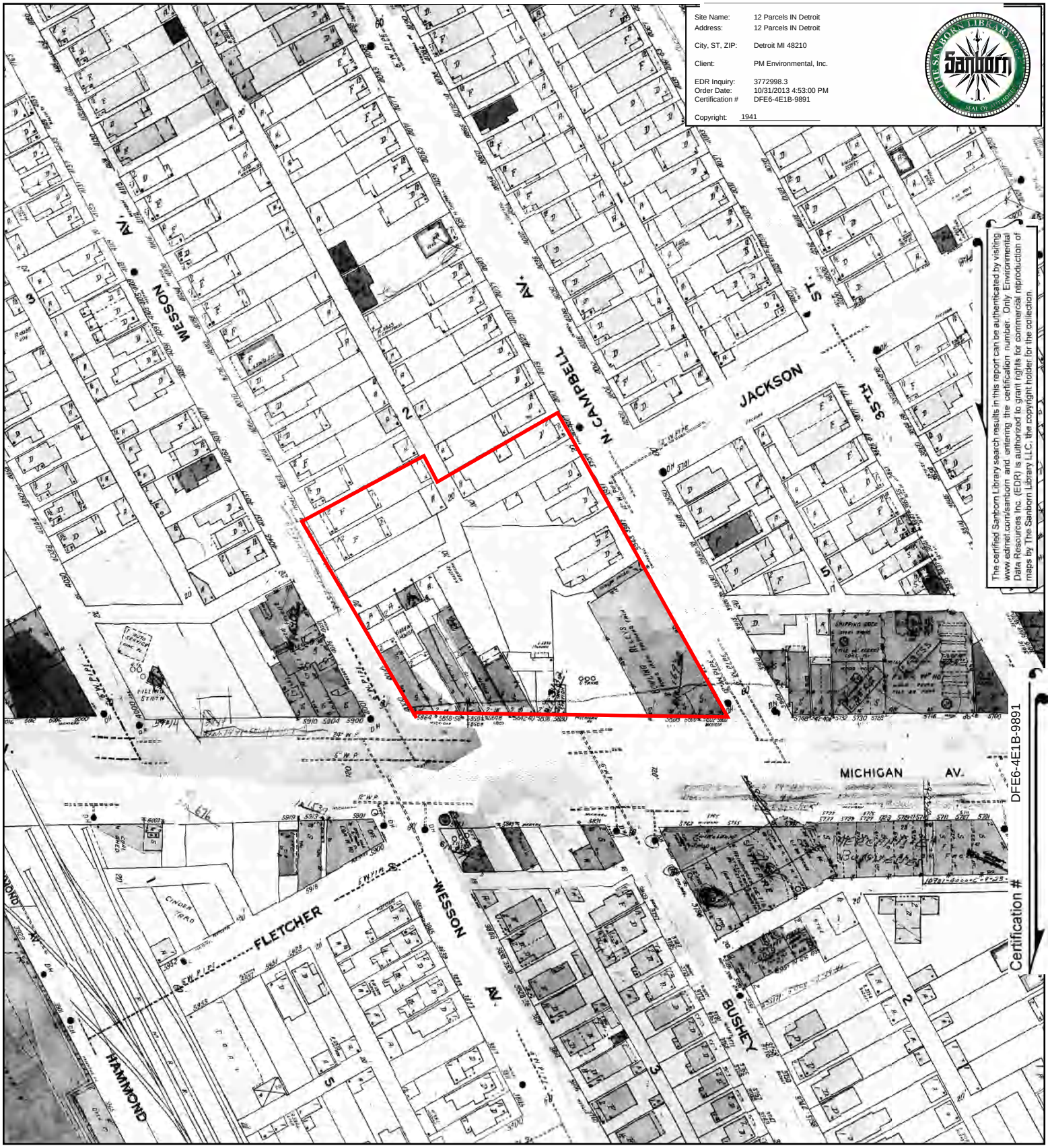
N

1941 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 1941



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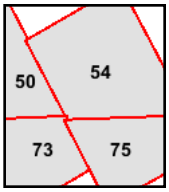

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N

1950 Certified Sanborn Map

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Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
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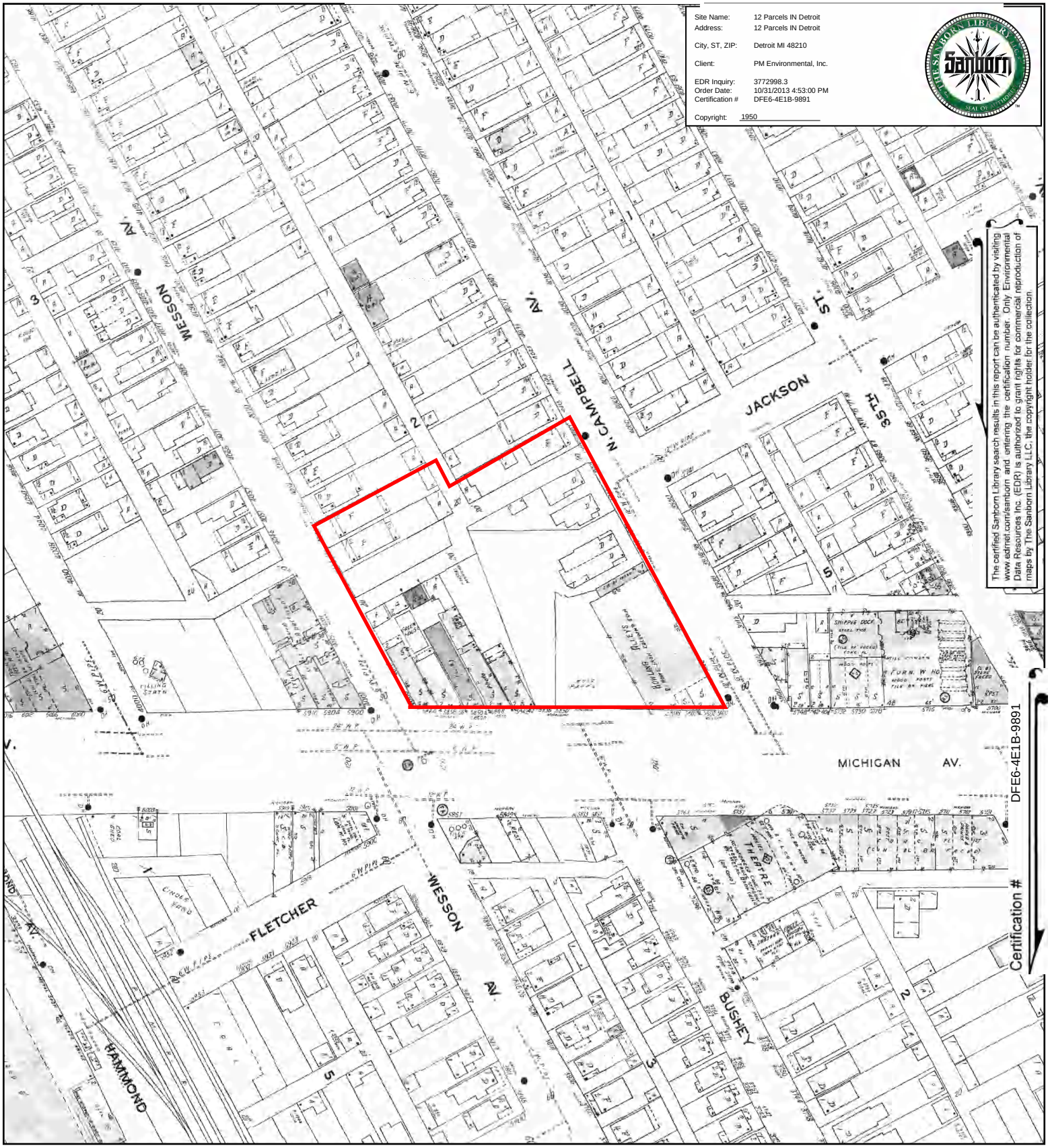

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Certification # DFE6-4E1B-9891

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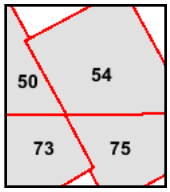

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N

1952 Certified Sanborn Map

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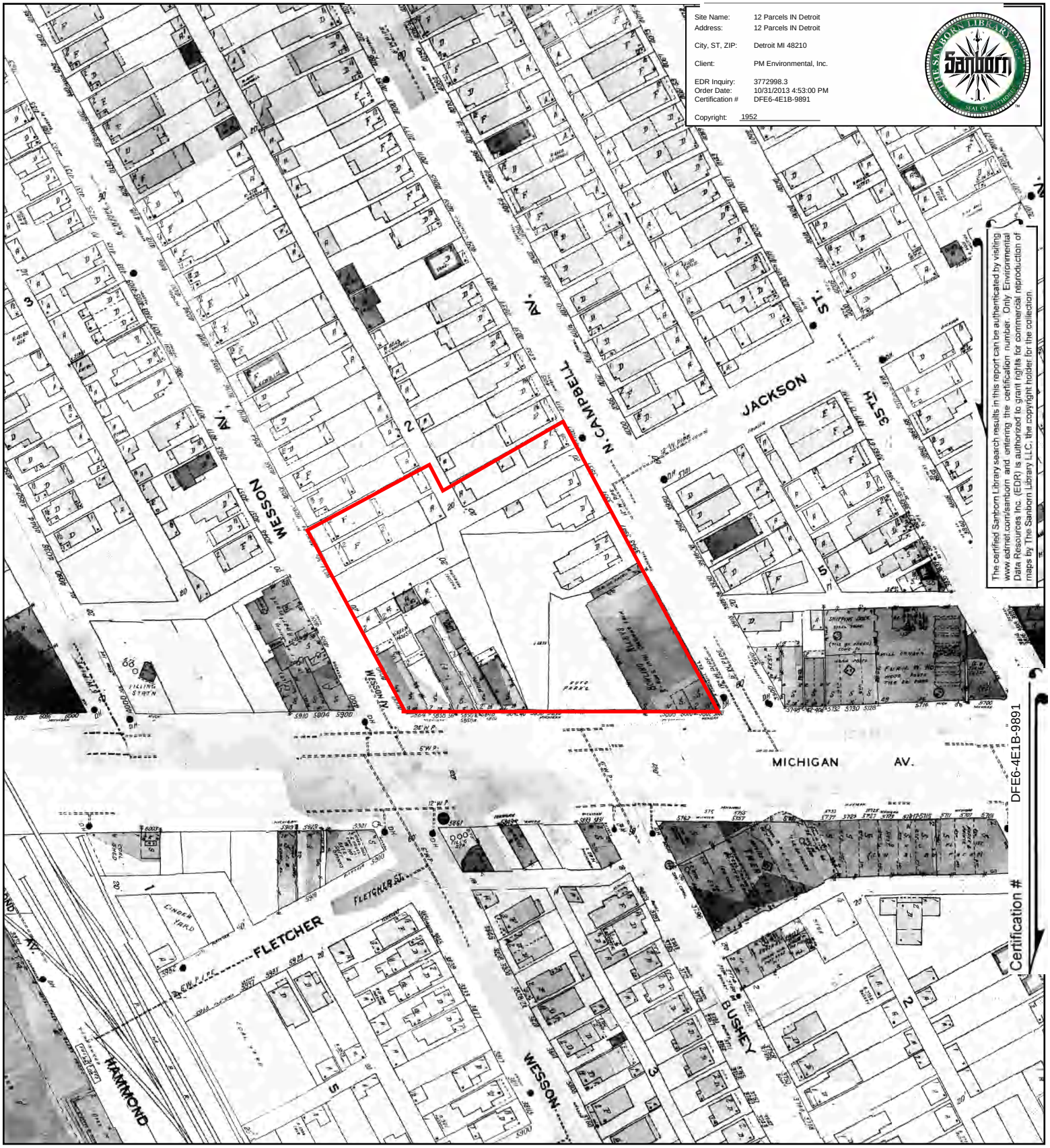
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 1952



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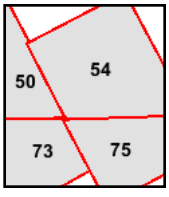

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N

1957 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 1957

Certification # DFE6-4E1B-9891

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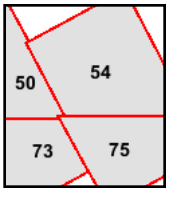

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N

1961 Certified Sanborn Map

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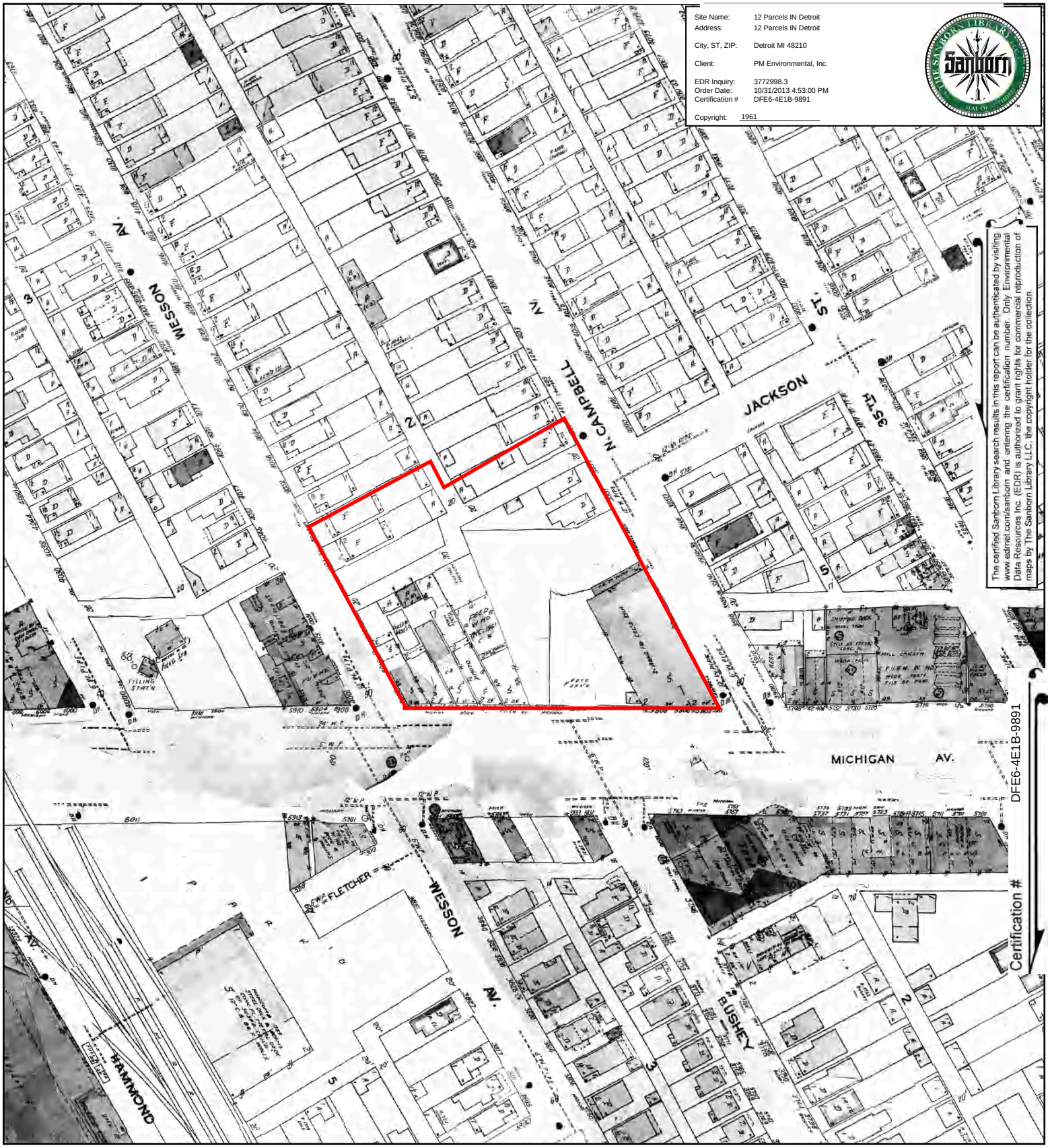
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification #: DFE6-4E1B-9891
Copyright: 1961



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Certification # DFE6-4E1B-9891

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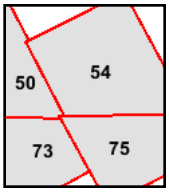

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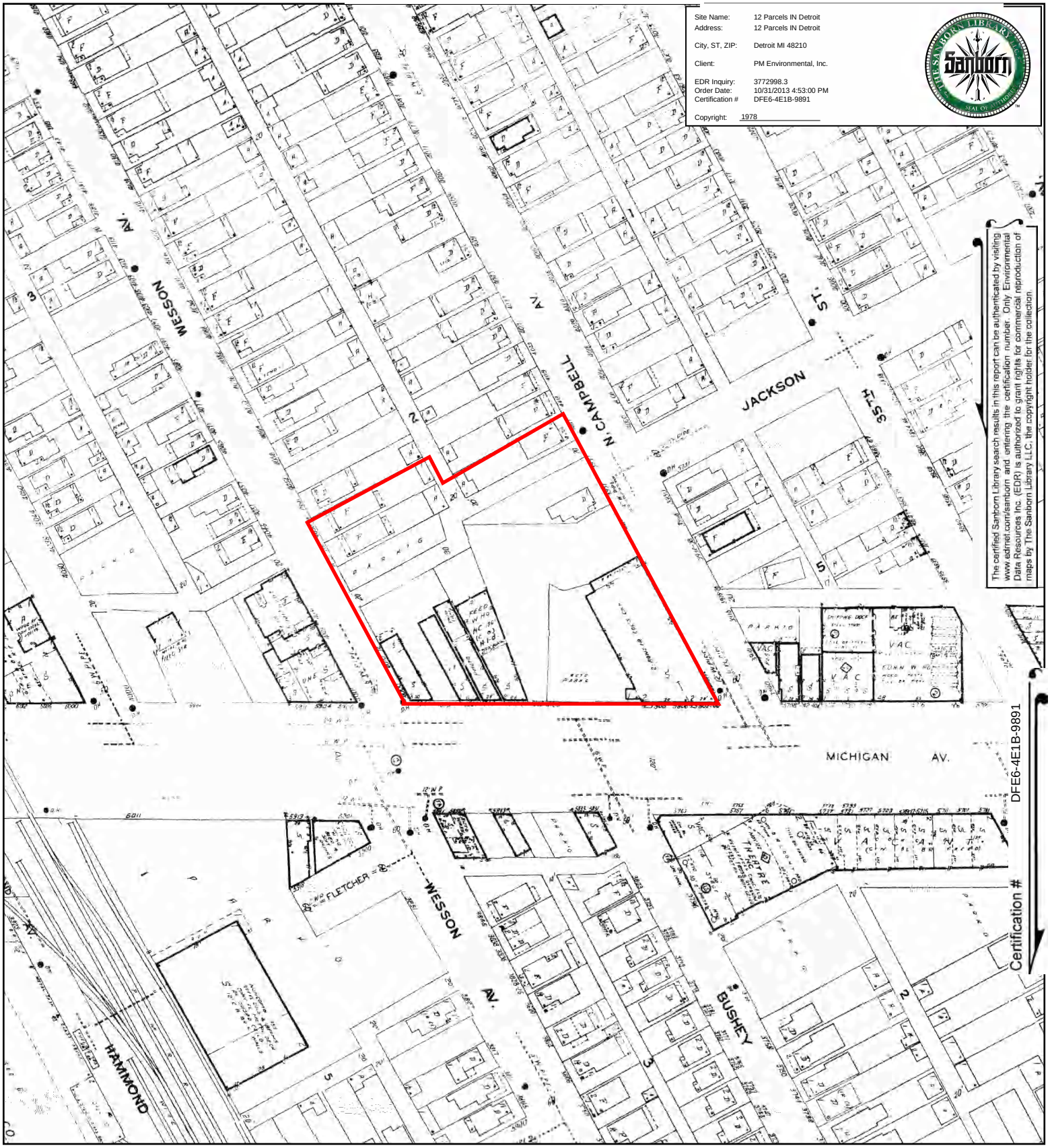
N

1978 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 1978



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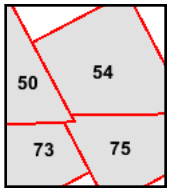

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1983 Certified Sanborn Map

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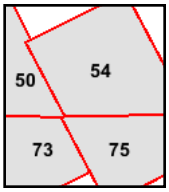

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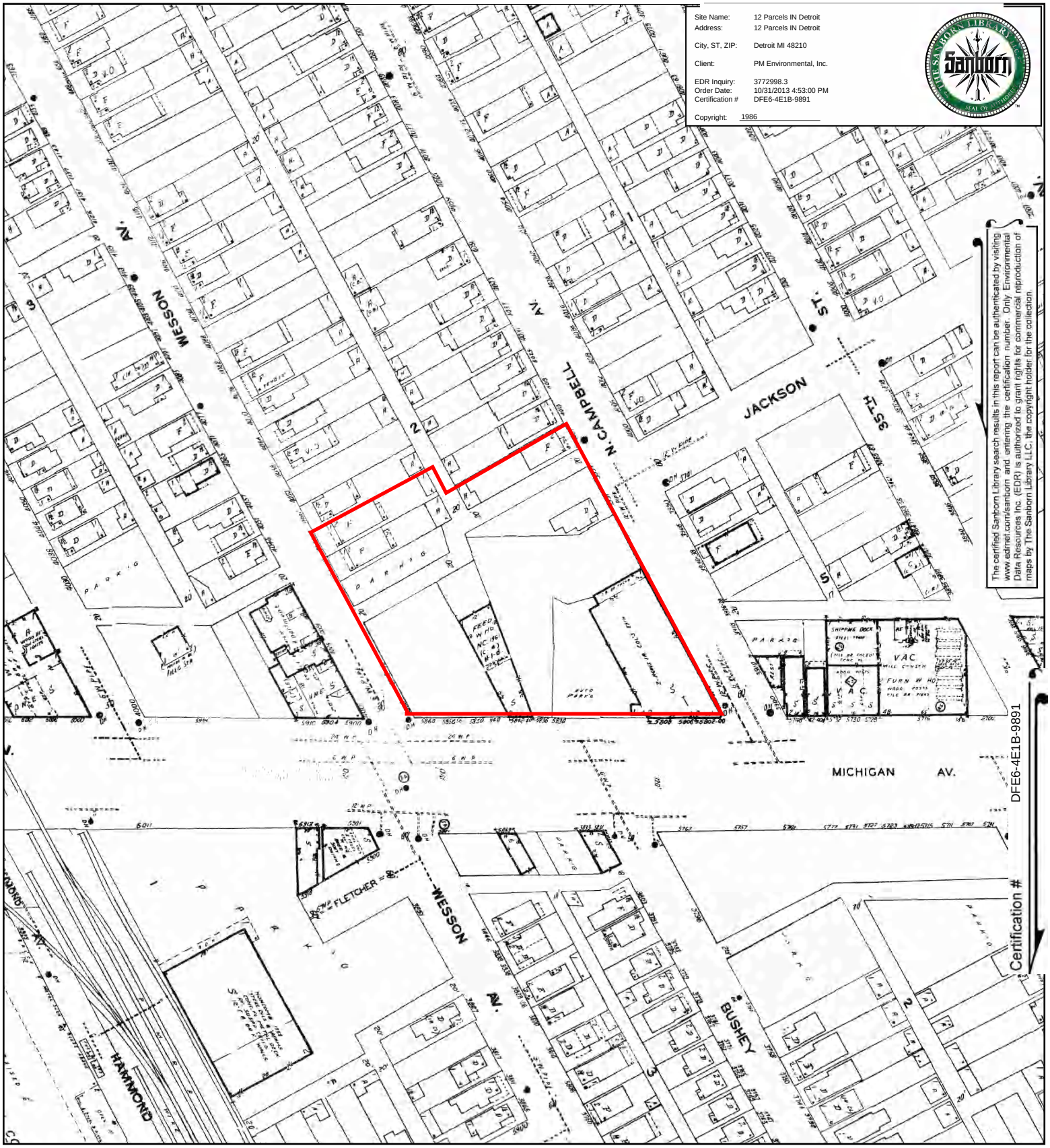
1986 Certified Sanborn Map



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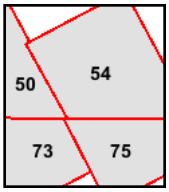

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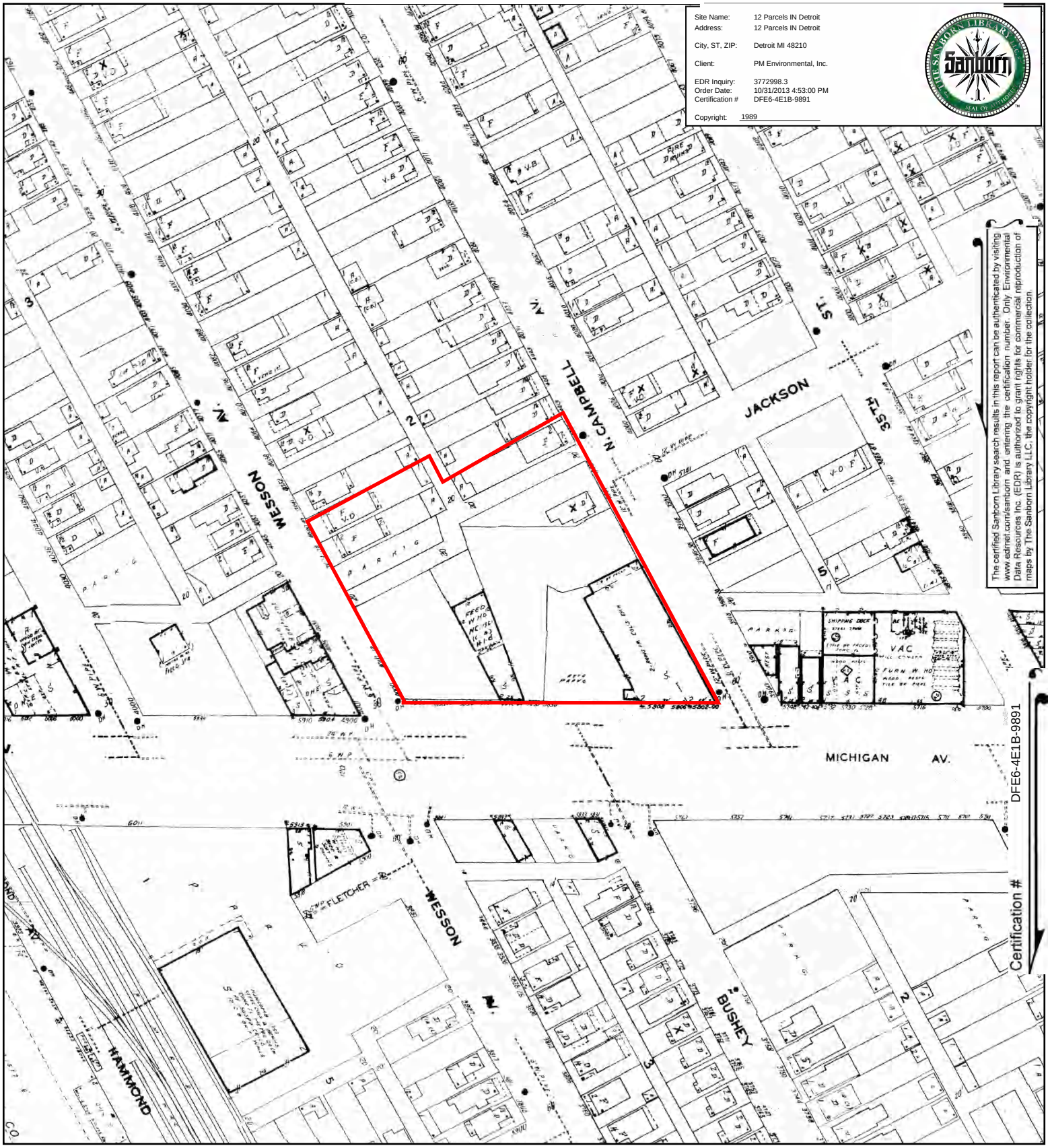
1989 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 1989



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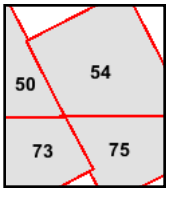

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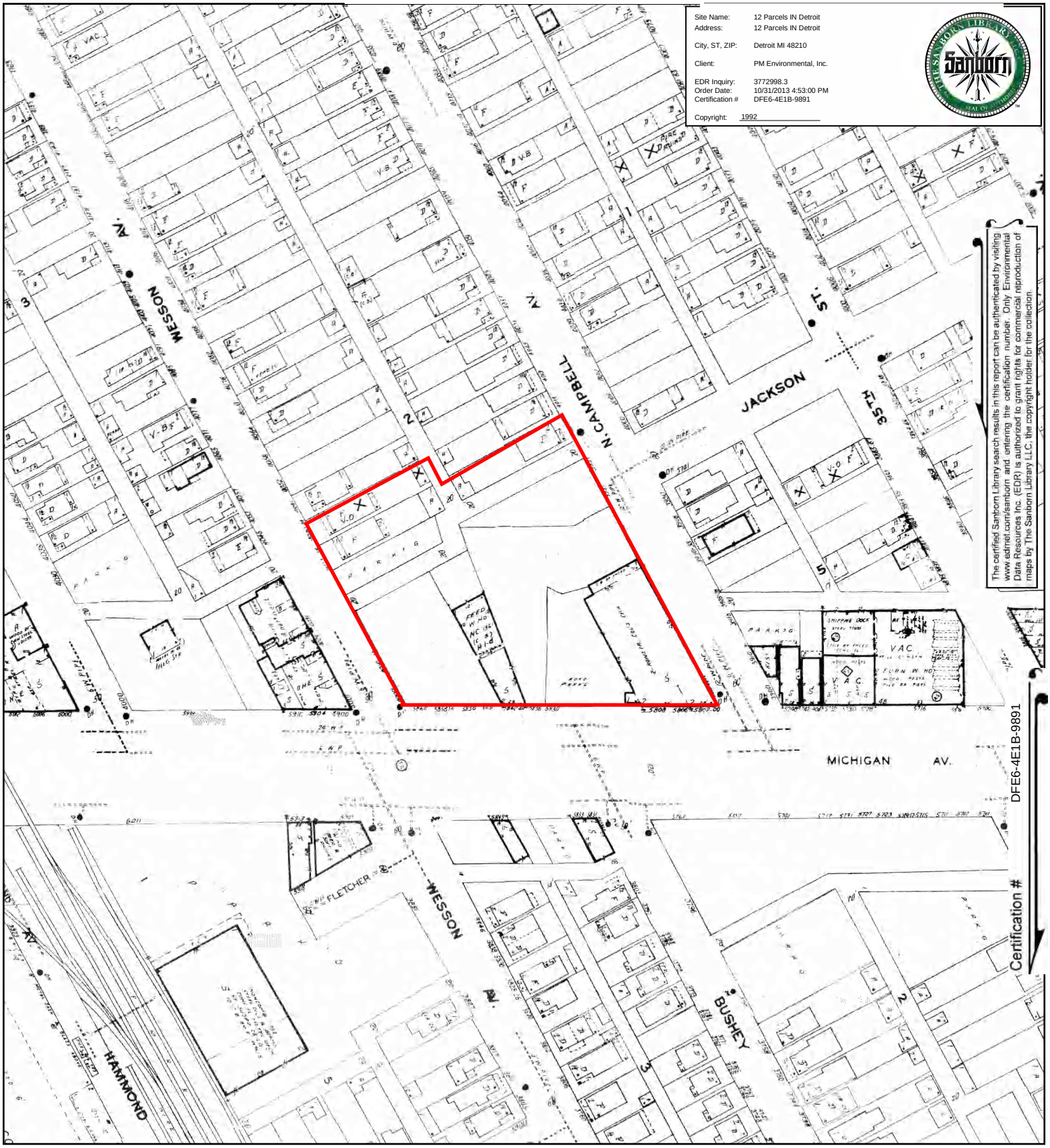
1992 Certified Sanborn Map



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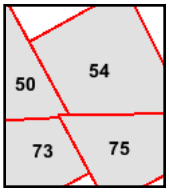

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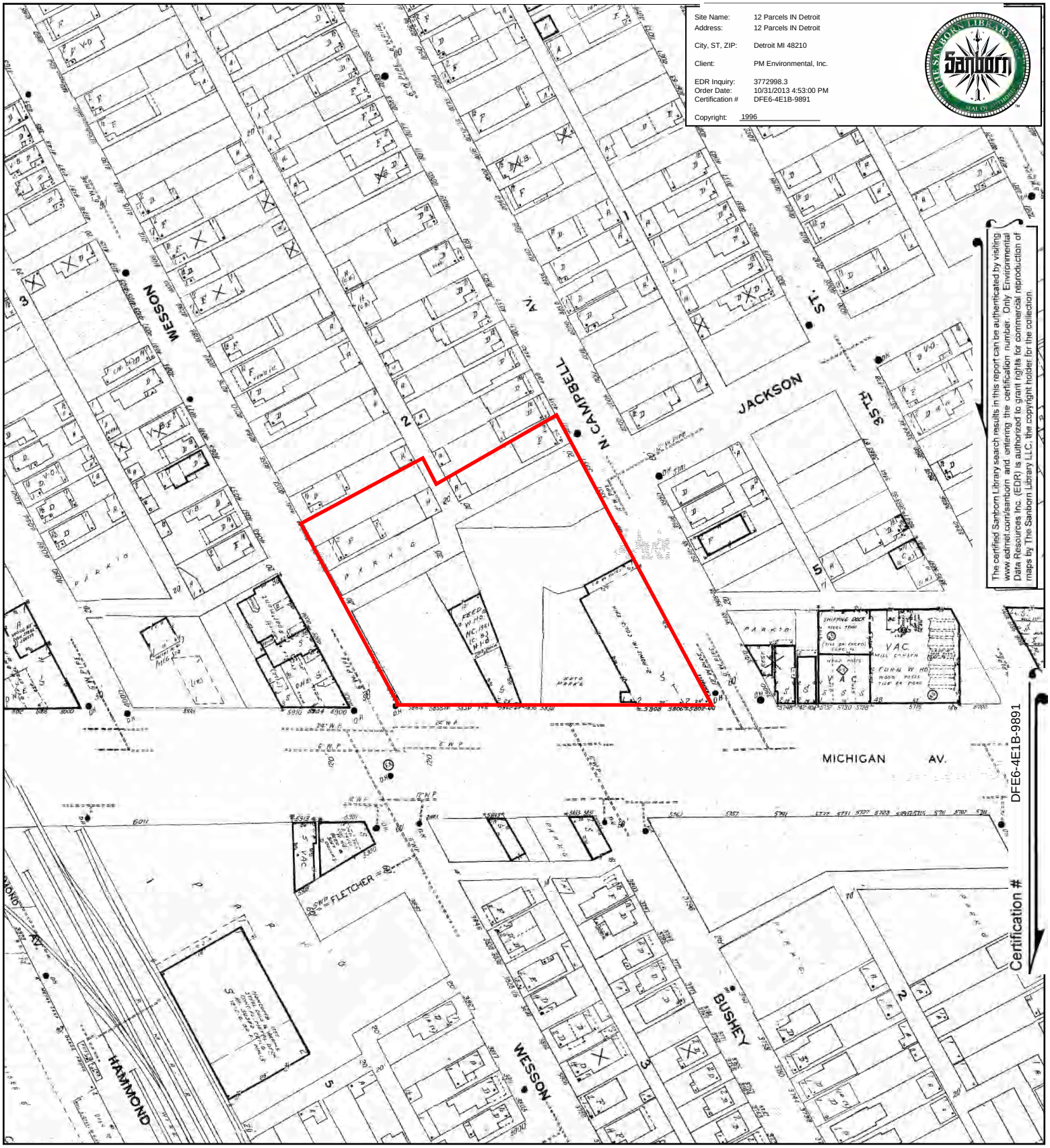
1996 Certified Sanborn Map



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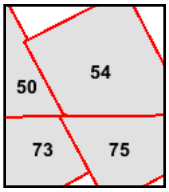

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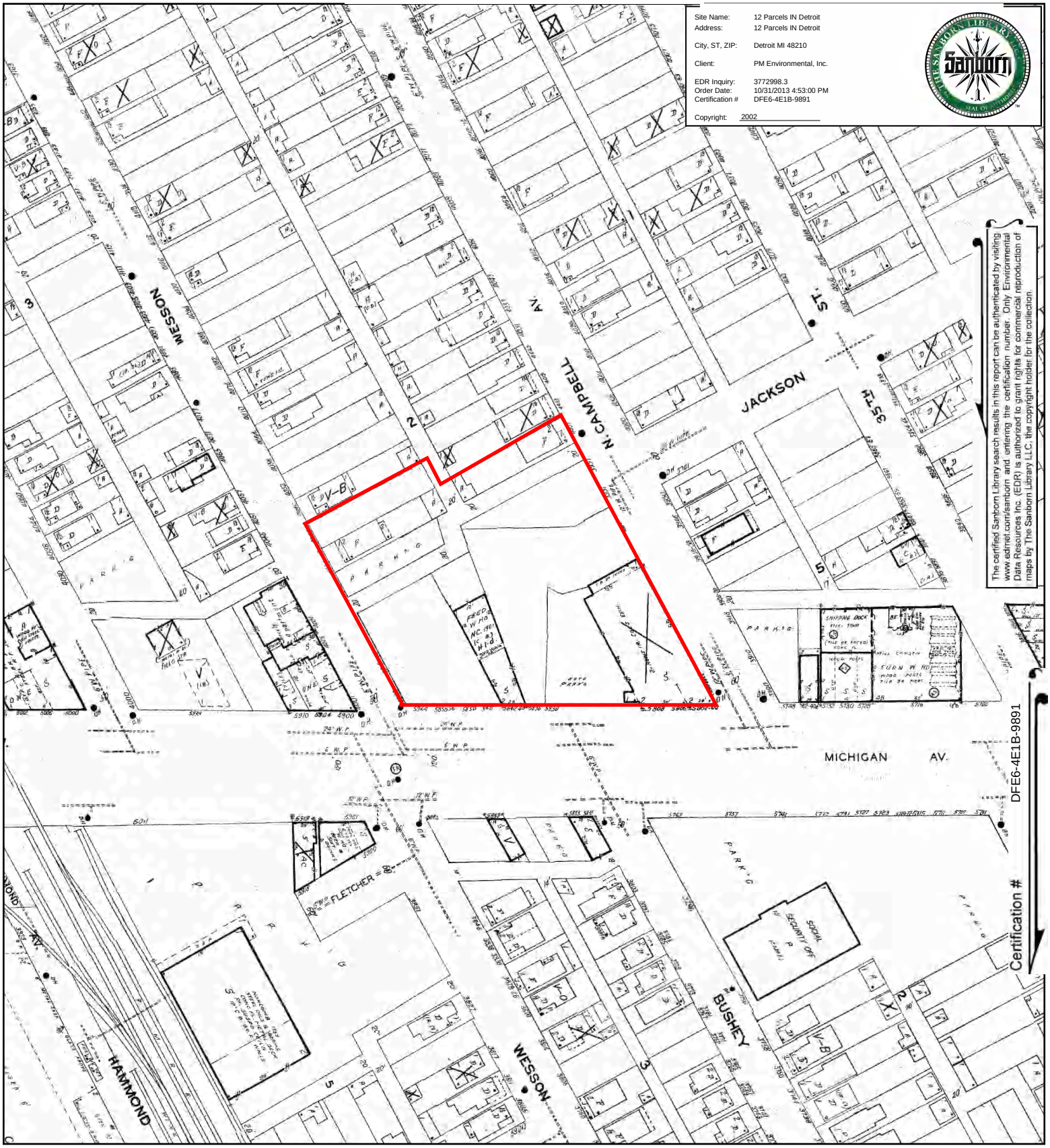
0 Feet 150 300 600

N

2002 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
Address: 12 Parcels IN Detroit
City, ST, ZIP: Detroit MI 48210
Client: PM Environmental, Inc.
EDR Inquiry: 3772998.3
Order Date: 10/31/2013 4:53:00 PM
Certification # DFE6-4E1B-9891
Copyright: 2002



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Certification # DFE6-4E1B-9891

This Certified Sanborn Map combines the following sheets.
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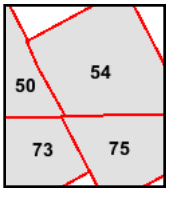

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Advanced Environmental Management Group
Global knowledge, local solutions. ®

Phase I enviroumeutal site assessmeut
5800-5864 Michigan Aveuue
4028-4044 Wesson Avenue
3951-4007 Campbell Aveuue
Detroit, Michigan 48210

for

Children's Outreach
P.O. Box 10509
Detroit, MI 48210

Prepared by:
Advanced Environmental Management Group
44339 Plymouth Oaks Blvd.
Plymouth, Michigan, 48170
November 1, 2010
PN-2100908

www.environmentai-help.com
voice: 734-354-9070 facsimiie: 734-354-9007

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Glossary

AEM Group	Advanced Environmental Management Group
AIS	Aquiflow Information System
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
AUL	Activity and Use Limitations
BEA	Baseline Environmental Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	CERCLA Information System
CERCLIS NFRAP	No Further Remedial Action Planned
EDR®	Environmental Data Resources, Inc.
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FOIA	Freedom of Information Act
IC/EC	Institutional Controls/Engineering Controls
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
MDEQ	Michigan Department of Environmental Quality
NPL	National Priority List
PCBs	Polychlorinated Biphenyls
RCRA	Resource Conservation and Recovery Act
RCRA CORRACTS	RCRA Corrective Action Report
RCRIS	Resource Conservation and Recovery Act Information System
REC	Recognized Environmental Condition
SHWS	State Hazardous Waste Site
SQG	Small Quantity Generator
SWF/LF	Solid Waste Facility/Landfill Facility
TSD	Treatment, Storage, and Disposal Site
USGS	United States Geological Survey
UST	Underground Storage Tank

Executive summary

Children's Outreach retained Advanced Environmental Management Group (AEM Group) to perform a Phase I Environmental Site Assessment (ESA) of the properties located at 5800-5864 Michigan Avenue, the adjoining parcels 7, 9, and 11 on Wesson Avenue (4028-4044 Wesson Avenue), and the adjoining parcels 6 and 8 on Campbell Avenue (3951-4007 Campbell Avenue), Detroit, Wayne County, Michigan 48210. AEM Group performed this ESA in conformance with the scope and limitations of the *American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Designation E1527-05).* Any exceptions to, or deletions from, this practice are described in Section 12 of this report.

Children's Outreach intends to obtain ownership of the subject properties. This Phase I ESA was conducted prior to these proposed transactions.

Based on municipal records and Sanborn Maps, the subject property was partially developed with commercial and residential properties by approximately 1880. The construction dates of the former onsite residential and commercial structures ranged from 1880-1961. No records were available to determine the sources of heat for these former onsite buildings, although it is assumed that wood, coal, oil, and/or natural gas may have been used for heating purposes. No records were available to indicate whether former heating oil storage tanks were used onsite or remain underground. Historically, heating oil storage tanks were not required to be registered with governmental agencies.

Businesses were indicated on the historical Sanborn Maps for the subject property that have the potential for impacting the soils and groundwater. These include: a "filling" station with gasoline storage tanks (5830 Michigan), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a "photo" shop (5848/50 Michigan), a greenhouse (adjoining north of 5856/58 Michigan), and automobile parking. Also, historical municipal records indicate that 5862/64 Michigan contained Bright Cleaners.

At the time of the site reconnaissance, 5800, 5840, 5848, 5850, 5858, and 5862/64 Michigan Avenue, 4028 and 4040/44 Wesson Avenue, and 3951, 3957, and 4007 Campbell Avenue contained vacant land with scattered debris; 4034/38 Wesson Avenue contained a fire-damaged duplex residence and garage.

The combined acreage of these properties is approximately 2.06 acres, based on City of Detroit Assessing Department records. Multiple owners are indicated for the subject properties. In addition, a restrictive covenant has been placed on 4040 Wesson, which states that "No structure shall be erected, placed or permitted to remain on the land herein conveyed except and only as such is made and used as part and parcel of Lot 13, the abutting property of which the Grantee herein is the title holder"; however, Lot 13 is not included in the subject property.

EDR lists the subject property as an historical auto station site (Steve's Service Station, 5830 Michigan Avenue) and also as an historical cleaner (Bright Cleaners, 5862/64 Michigan Avenue). Additional sites of potential environmental concern are located in the surrounding area.

The subject property is located in a mixed-use area containing residential, commercial, and industrial properties. The subject property is surrounded by: (north) residential properties; (east) Campbell Avenue, followed by residential properties and former commercial properties undergoing redevelopment; (southeast) Michigan Avenue, followed by a U.S. Social Security Administration building; (south) Michigan Avenue, followed by Michigan Animal Hospital and vacant buildings; (southwest) Michigan Avenue, followed by Gigante Supemercado, Olympic Steel/Tri Star Steel, and Powr Shower; and (west) Wesson Avenue, followed by an apartment building and residential properties, Joe Street, and Autorama.

Based upon the site reconnaissance and review of available information, AEM Group has identified the following Recognized Environmental Conditions (RECs) at the proposed subject property:

- potential impacts from former onsite operations- the property has been utilized for a former historical gasoline station (5830 Michigan Avenue), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a photo shop (5848/50 Michigan Avenue), a greenhouse (adjoining north of 5856/58 Michigan), a cleaners (5862/64 Michigan Avenue), and automobile parking. It is assumed that chemicals and/or petroleum products were used and stored at these locations, which may have caused historic spills/releases
- no records were available to confirm the removal of the former onsite gasoline storage tanks at the "filling" station
- no records were available to determine whether heating oil storage tanks formerly were used onsite or remain underground
- fire damaged the former residence and garage at 4034/38 Wesson Avenue, which may have introduced hazardous materials to the subsurface soils and groundwater from onsite chemicals, oils, and materials that were damaged in the fire and also from fire-suppression chemicals
- construction debris, which included concrete, bricks, asphalt, and wood, was observed on the subject property, as well as tires, plastic, metal debris, and small piles of soil that were approximately 2 to 3 feet in diameter
- asbestos-containing materials and lead-based paints may be present in the building at 4034/38 Wesson Avenue due to the age of the onsite construction materials
- an unknown cylindrical structure (approximately 33 inches by 12.5 inches) was observed at 4028 Wesson Avenue. The structure may be associated with underground venting, although its purpose is unknown
- surrounding properties are listed as potential sites of environmental concern in the surrounding area.

Recognized Environmental Conditions were identified at the subject property due to the potential presence of hazardous substances and/or petroleum products that may be associated with previous onsite operations and activities. The environmental impact to the subject property includes not only onsite RECs, but also potential releases from surrounding properties.

As a result of these Recognized Environmental Conditions, AEM Group recommends that an additional investigation of these issues should be conducted.

1.0 Introdnction

Children's Outreach retained AEM Group to conduct a Phase I Environmental Site Assessment (ESA) of the properties located at 5800-5864 Michigan Avenue and the adjoining parcels 7, 9, and 11 on Wesson Avenue (4028-4044 Wesson Avenue) and the adjoining parcels 6 and 8 on Campbell Avenue (3951-4007 Campbell Avenue), Detroit, Wayne County, Michigan 48210 (the subject property). This ESA was performed in accordance with the *American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment process (ASTM Designation E1527-05).*

1.1 Identification of user

As identified by ASTM terminology, the User of this report is Children's Outreach.

1.2 Purpose of Phase I ESA

The purpose of this Phase I ESA is to identify, to the extent feasible, and pursuant to the process described in the ASTM Designation 1527-05, Recognized Environmental Conditions (RECs) associated with the property. As defined by ASTM Designation 1527-05, a REC is *"the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property."* A REC is not intended to include *de minimis* conditions that generally do not present a material risk of harm to the public health or environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Tbis ESA report compiles the results of our study and presents our professional opinions and conclusions regarding the environmental conditions that existed at the time of the site reconnaissance. The opinions and evaluations included in this report should not be interpreted in the same way as those pertaining to an environmental compliance audit.

1.3 Scope of services/methodology

The Phase I ESA includes a review of records, a site visit, interviews with representatives of the property, and a written report for the subject property.

Details regarding thc steps involved in this environmental investigation are provided below.

1.3.1 Environmental records search

AEM Group obtained a Radius Map with GeoCheck® prepared by Environmental Data Resources, Inc. (EDR). EDR searched federal and state environmental records regarding the subject property and the propertics in thc surrounding area.

Appendix A provides a copy of the EDR Radius Map Report.

The EDR report searched the following federal ASTM standard databases:

- National Priority List (NPL) and Delisted NPL
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
- CERCLIS- No Further Remedial Action Planned (CERCLIS-NFRAP)
- Corrective Action Reports (RCRA CORRACTS)

- Resource Conservation and Recovery Information System (RCRIS) associated treatment, storage, and disposal (TSD) facilities, large-quantity generators (LQG), and small-quantity generators (SQG)
- Emergency Response Notification System (ERNS)
- U.S. Brownfields
- Federal Institutional Control/Engineering Control Registries (IC/EC)

The EDR report also searched the following state and tribal ASTM standard databases:

- State hazardous waste sites (SHWS)
- Solid waste and landfill facilities (SWF/LF)
- Registered and leaking underground storage tanks (USTs and LUSTs)
- Registered aboveground storage tanks (ASTs)
- Baseline Environmental Assessment sites (BEA)
- Historical landfills
- Drycleaners

1.3.2 Standard historical sources

AEM Group reviewed the standard historical sources identified in ASTM Designation E1527-05, Sections 8.3.4.1 through 8.3.4.9, that were both reasonably ascertainable and practically reviewable (that is, could be reviewed in a reasonable timeframe) for the subject property, including historical records, documents, and information from the following sources:

- City of Detroit Finance Department, Assessments Division and Assessment Records Center
- City of Detroit Fire Department
- City of Detroit Law Department
- City of Detroit Water and Sewerage Department
- City of Detroit Planning Department
- City of Detroit Buildings, Safety, Engineering, and Environmental Department
- Wayne County Department of Public Services
- Michigan Department of Natural Resources and Environment
- EDR Environmental LienSearch™ report
- EDR Sanborn® Map report
- EDR Historical Topographic Map report
- EDR Aerial Photo Decade Package
- EDR City Directory abstract
- USGS topographic maps: Detroit, Michigan 1980 quadrangle and Dearborn, Michigan 1983 quadrangle

1.3.3 Site reconnaissance

Ms. Carol Wolff, M.S. of Advanced Environmental Management Group (AEM Group) conducted the site reconnaissance of the subject property on September 29, 2010. Visual observations also were made of the adjoining properties. Ms. Cheryl Frost, Chief Operating Officer of Children's Outreach, provided a site plan for the site visit and responded to questions concerning the subject property.

Photographs were taken to document the condition of the subject property at the time of the site reconnaissance. Copies of these photographs are provided in a separate section following the body of this report.

1.3.4 Interviews

AEM Group contacted the City of Detroit: Finance Department- Assessments Division and Assessments Records Center; Water and Sewerage Department; Planning Department; Buildings, Safety, Engineering, and Environmental Department; Law Department, and the Fire Department regarding historical or current environmental concerns associated with the subject property and to evaluate past use. Information obtained from these interviews was used in the preparation of this report.

Appendix B contains governmental records that were provided as a result of these interviews.

Ms. Frost, Mr. Joe Gappy, and Ms. Janay Mallet Eisenmenger were interviewed for information concerning the subject property. Mr. Gappy represented himself and Cardiff Properties and also provided information concerning other subject properties that were owned by members of his family (Hani Y. Gappy, City Houses, LLC, and Jeffrey Gappy et al). Ms. Eisenmenger provided information concerning the subject property that was owned by Southwest Housing Solutions. However, no response for information was received from the City of Detroit Planning & Development Department, and no contact information was provided for Washington Mutual Bank, which are also listed as owners.

Appendix C contains a copy of the Phase I Questionnaire for the Owner/Occupant, which was completed by Mr. Gappy.

Appendix C also contains a copy of the User Questionnaire, which was completed by Ms. Frost.

1.3.5 Environmental reports

No previous environmental reports were provided to AEM Group for review.

1.4 Significant assumptions

No assumptions due to special circumstances were made that would significantly change the common application of the scope of services as set forth in ASTM Designation E1527-05. For the preparation of this Phase I ESA report, AEM Group relied on documents and/or information provided by government officials and other parties, and the information contained in the files of state and/or local regulatory agencies available at the time the Phase I was conducted. No independent verification or confirmation of the accuracy of information provided by others was performed. Furthermore, no efforts were made to evaluate the compliance status of the subject property with federal, state, or local laws and regulations, environmental or otherwise.

1.5 Special terms and conditions

No special terms and conditions applied.

1.6 User reliance

This ESA report was prepared by Ms. Wolff and reviewed by Mr. Stephen Gorham, P.E. on behalf of, and for, the exclusive use by Children's Outreach and its financial and/or legal representatives, which may rely upon this report regarding the environmental evaluation of the subject property under the standard AEM Group terms and conditions.

2.0 Site description

Information concerning site conditions of the subject property is discussed in the following sections.

2.1 Location and legal description

The subject property contains the parcels located at: 5800-5864 Michigan Avenue, the adjoining parcels 7, 9, and 11 on Wesson Avenue (4028-4044 Wesson Avenue), and the adjoining parcels 6 and 8 on Campbell Avenue (3951-4007 Campbell Avenue), Detroit, Wayne County, Michigan 48210. The subject property is situated at approximately 42.331500 latitude (north) and 83.114900 longitude (west).

Figure 1 provides a copy of the site location map.

The City of Detroit Finance Department, Assessments Division, identifies the subject property parcels as:

- 4028 Wesson- Parcel 16015321/ lot 7
- 4034 Wesson- Parcel 16015322/ lot 9
- 4040/44 Wesson- Parcel 16015323/ lot 11
- 3951 Campbell- Parcel 16014695/ partial lot 6
- 3957 Campbell- Parcel 16014694/ partial lot 6
- 4007 Campbell- Parcel 16014693/ lot 8
- 5800 Michigan- Parcel 16001706-8
- 5840 Michigan- Parcel 16001705
- 5848 Michigan- Parcel 16001704
- 5850 Michigan- Parcel 16001703
- 5858 Michigan- Parcel 16001702
- 5862/64 Michigan- Parcel 16001701

The combined acreage of these properties is approximately 2.06 acres based on City of Detroit Assessing Department records.

Appendix B contains a copy of the legal descriptions for the subject properties in the City of Detroit Real Estate Summary Sheets.

2.2 Site and vicinity general characteristics

The subject property is located north of Michigan Avenue between Wesson (west) and Campbell (east) Avenues. It is located in a mixed-use area containing residential, commercial, and industrial development.

Figure 2 provides a site vicinity map.

2.3 Current use of the subject property

At the time of the site reconnaissance, 5800, 5840, 5848, 5850, 5858, and 5862/64 Michigan Avenue, 4028 and 4040/44 Wesson Avenue, and 3951, 3957, and 4007 Campbell Avenue contained vacant land with scattered debris; 4034/38 Wesson Avenue contained a fire-damaged duplex residence and garage.

2.4 Past uses of the subject property

Based on municipal records and Sanborn Maps, the subject property was partially developed with commercial and residential properties by approximately 1880. The construction dates of the former onsite residential and commercial structures ranged from 1880-1961.

Commercial operations with potential environmental impact were constructed on the subject property. These include: a "filling" station with gasoline storage tanks (5830 Michigan), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a "photo" shop (5848/50 Michigan), a greenhouse (adjoining north of 5856/58 Michigan), and automobile parking. Also, historical municipal records indicate that 5862/64 Michigan contained Bright Cleaners.

Historical Sanborn Maps, city directories, and municipal records indicate that the subject property also contained: hotels, stores, a grocery/supermarket, residential properties, horse and wagon sheds, bowling alley/billiards, a beer garden, a feed warehouse, and restaurants/taverns.

2.5 Description of structures, roads, and other improvements

No structures remain on the subject property, with the exception of a fire-damaged former duplex and garage, which are located at 4034/38 Wesson Avenue.

A dirt path intersects the subject property from Campbell Avenue to Michigan Avenue. In addition, an unpaved alley is located between the Michigan Avenue subject property parcels and parcels #7 and #8. Another unpaved alley runs in a north-south direction between the rear of the parcels along Wesson Avenue and the rear of the parcels along Campbell Avenue.

2.6 Current use of the adjoining properties

AEM Group conducted a visual survey of the adjoining properties to identify off-site sources that may have the potential to impact the environmental conditions of the subject property.

The subject property is surrounded by: (north) residential properties; (east) Campbell Avenue, followed by residential properties and former commercial properties undergoing redevelopment; (southeast) Michigan Avenue, followed by a U.S. Social Security Administration building; (south) Michigan Avenue, followed by Michigan Animal Hospital and vacant buildings; (southwest) Michigan Avenue, followed by Gigante Supemercado, Olympic Steel/Tri Star Steel, and Powr Shower; and (west) Wesson Avenue, followed by an apartment building and residential properties, Joe Street, and Autorama.

3.0 User provided information

3.1 Title records/current ownership

The City of Detroit Finance Department, Assessments Division identifies multiple owners for the subject property parcels. These include:

- 4028 Wesson- Parcel 16015321: City Houses, LLC
- 4034 Wesson- Parcel 16015322: Southwest Housing Solutions
- 4040/44 Wesson- Parcel 16015323: City of Detroit Planning & Development
- 3951 Campbell- Parcel 16014695: Cardiff Properties, LLC
- 3957 Campbell- Parcel 16014694: Cardiff Properties, LLC
- 4007 Campbell- Parcel 16014693: Washington Mutual Bank
- 5800 Michigan- Parcel 16001706-8: Hani Y. Gappy
- 5840 Michigan- Parcel 16001705: Joey Gappy
- 5848 Michigan- Parcel 16001704: Cardiff Properties, LLC
- 5850 Michigan- Parcel 16001703: Cardiff Properties, LLC
- 5858 Michigan- Parcel 16001702: Cardiff Properties, LLC
- 5862/64 Michigan- Parcel 16001701: Cardiff Properties, LLC

AEM Group obtained the EDR Environmental LienSearch™ reports for the subject property parcels (Appendix D). The ownership titles for these parcels, which are listed in the LienSearch™ reports, coincide with the ownership records listed by the City of Detroit Finance Department, Assessments Division, except for the following properties:

- 4034 Wesson- Southwest Housing Solutions (ownership listed by Assessor). The LienSearch™ report lists City Houses, LLC as the owner on May 6, 2009 and Southwest Housing Solutions as the owner on June 1, 2010
- 3951 Campbell- Cardiff Properties, LLC (ownership listed by Assessor). The LienSearch™ report lists the City of Detroit Planning & Development Department as the owner on January 19, 2010
- 3957 Campbell- Cardiff Properties, LLC (ownership listed by Assessor). The LienSearch™ report lists the City of Detroit Planning & Development Department as the owner on January 19, 2010.

3.2 Environmental liens/activity and use limitatious

No environmental liens or activity and use limitations were noted for the subject property parcels in the EDR Radius Map Report or in the City of Detroit files for the subject property.

According to the EDR Environmental LienSearch™ Reports, no environmental liens or activity and use limitations were reported for the subject properties.

Appendix D contains copies of the EDR Environmental LienSearch™ Reports, which are dated September 28, 2010 and October 11, 2010.

3.3 Specialized knowledge or experience of the user

Ms. Frost, Chief Operating Officer of Children's Outreach, indicated in the Phase I Questionnaire for the User that she has no specialized knowledge or experience related to the property or nearby properties. A copy of this Questionnaire is contained in Appendix C.

3.4 Commonly known or reasonably ascertainable information

Ms. Frost indicated in the Phase I Questionnaire for the User that she has knowledge of past uses of the subject property, but has no knowledge of: specific chemicals, spills or chemical releases, or environmental cleanups that have taken place.

3.5 Valuation reduction for environmental issues

Ms. Frost indicated in the Phase I Questionnaire for the User that the purchase price for the property reasonably reflects the fair market value of the property.

3.6 Owner, key site manager, and tenant information

Mr. Joe Gappy was interviewed on September 29, 2010. Mr. Gappy provided information concerning the subject properties that he owned (Joe Gappy and Cardiff Properties) and also those owned by members of his family (Hani Y. Gappy, City Houses, LLC, and Jeffrey Gappy et al). He indicated that his family owned the subject property along Michigan Avenue between Wesson and Campbell and also the subject property home on Wesson that was currently fire-damaged. Mr. Gappy noted that a supermarket was owned and operated by his family at 5800 Michigan Avenue from 1975 until it was destroyed by fire in 1999; it was later demolished. He stated that natural gas was used to heat the supermarket. He also indicated that a pet store/antique shop was located at 5840 Michigan Avenue, which he purchased in approximately 2004 and then demolished. He noted that he had purchased 5862 Michigan Avenue from the City of Detroit. Mr. Gappy stated that he and his family had purchased the subject property parcels in order to accumulate land for a new grocery store, which was not constructed. He also stated that he has no knowledge of storage tanks or environmental concerns on the subject property, with the exception of "dirt on top".

Ms. Eisenmenger stated that 4034 Wesson was owned by Southwest Housing Solutions. She stated that no environmental investigation had been conducted by Southwest Housing Solutions prior to their purchase of this home. However, she indicated that asbestos materials would be remediated at this fire-damaged property prior to demolition.

No response for information was received from the City of Detroit Planning & Development Department, and no contact information was provided for Washington Mutual Bank, which are also listed as subject property owners.

No tenants currently occupy the subject property. No contact information was provided for representatives of previous tenants.

3.7 Reason for performing Phase I ESA

This ESA was performed to provide Children's Outreach with an independent evaluation of the potential environmental risks that may be associated with the subject property prior to their purchase of the subject property.

3.8 Environmental permits and/or violations

Mr. Gappy and Ms. Eisenmenger stated that they have no knowledge of environmental permits or violations associated with the subject properties.

4.0 Records review

The purpose of the records review is to obtain and review records that could help identify potential environmental concerns associated with the subject property. AEM Group obtained and reviewed a report prepared by EDR for the subject property dated September 16, 2010. The EDR Radius Map report includes the results of a search of federal and state ASTM standard databases as listed in this Phase I ESA report. The EDR report contains the findings of the computerized environmental records search for both the subject property and the surrounding area based on ASTM recommended search distances.

Appendix A provides a copy of the EDR Radius Map report, including a list of the federal, state, and ASTM supplemental databases.

4.1 Federal records

Based on a review of the EDR Radius Map report, the following federal ASTM standard databases and results are listed within the following search distances from the subject property:

Federal ASTM Standard	Search distance (miles)	Listed property	Distance and direction from site (miles)
NPL	1.0	None	-
Proposed and delisted NPL	1.0	None	-
CERCLIS	0.5	1 site	1/8-1/4 mile
CERCLIS-NFRAP	0.5	None	-
RCRA CORRACTS	1.0	1 site	1/2-1 mile
RCRIS-TSD	0.5	None	-
RCRIS-LQG	0.25	None	-
RCRIS-SQG	0.25	None	-
RCRIS-CESQG	0.25	1 site	1/8-1/4 mile
ERNS	Subject property	None	-
Federal Institutional Control-Engineering Control Registries	0.5	None	-
U.S. Brownfields	0.5	1 site	1/4-1/2 mile

Based on a review of the EDR report, the subject property is not included in the listing of federal ASTM standard database sites.

One CERCLIS site is plotted 1/8-1/4 mile from the subject property: Buchanan Street Warehouse Fire, 6000 Buchanan Street, Detroit. This site was listed as a CERCLIS as a result of a warehouse fire that involved hazardous substances. EDR indicates that the site was cleaned up in 2005 with U.S. EPA oversight and air monitoring support.

One RCRA CORRACTS site is plotted 1/2-1 mile from the subject property: Motors Liquidation Company, 2860 Clark Street, Detroit. This site was formerly a General Motors manufacturing

assembly plant for Cadillac. Based on the EDR report, this site was assigned a low corrective action priority.

One Conditionally Exempt Small Quantity Generator of Hazardous Waste is plotted 1/8-1/4 mile from the subject property: Olympic Steel, 3600 Military Street, Detroit. No violations were reported for this property.

One U.S. Brownfields site is listed 1/4-1/2 mile from the subject property: MI Ave and 31st Street, 3724 31st Street, Detroit. This 0.83-acre site is owned by the City of Detroit and is described as "stores, commercial". The cleanup funding source was the U.S. EPA. No information was listed concerning the type of onsite contamination.

4.2 State records

Based on a review of the EDR Radius Map report, the following sites are listed within the following search distances from the subject property in the state ASTM databases:

State ASTM standard	Search distance (miles)	Listed properties	Distance and direction from subject property (miles)
State Hazardous Waste Sites (SHWS)	1.0	2 sites	1/2-1 mile
State landfills	0.5	None	-
LUST	0.5	7 sites	<1/8-1/2 mile
UST	0.25	2 sites	<1/8-1/4 mile
AST	0.25	1 site	<1/8 mile
BEA	0.5	5 sites	<1/8-1/2 mile
Historical landfills	0.5	None	-
Dry cleaners	0.25	None	-
Brownfields	0.50	2 sites	<1/8-1/2 mile
AUL (Engineering and Institutional Controls)	0.50	2 sites	1/8-1/4 mile
EDR Historical Auto Stations	0.25	15 sites	<1/8-1/4 mile
EDR Historical Cleaners	0.25	11 sites	<1/8-1/4 mile

Based on a review of the state ASTM standard databases and the state supplemental standard databases queried by EDR, the subject property is listed in these databases as an historical auto service station (Steve's Service Station, 5830 Michigan Avenue) and also as an historical cleaner (Bright Cleaners, 5864 Michigan Avenue).

Two State Hazardous Waste sites are plotted 1/2-1 mile from the subject property: CSX Transportation/Norfolk Southern Rail, 2975 Livernois Detroit and Former Kelsey Hayes, 5034 Military Street, Detroit.

- EDR lists the CSX Transportation/Norfolk Southern Rail site as "Interim Response in progress". The pollutants are not reported

- EDR lists the former Kelsey Hayes site as "Inactive- no actions taken to address contamination". The pollutants are listed as: anthracene, arsenic, benzo(a)pyrene, fluorene, phenanthrene, pyrene, and vinyl chloride

Seven LUST sites are plotted <1/8-1/2 mile from the subject property. These include:

- Hussein Saab: 5938 Michigan Avenue, Detroit (Open LUST for gasoline), <1/8 mile west-southwest of the subject property
- Olympic Steel: 3600 Military Street, Detroit (Open LUST), 1/8-1/4 mile south-southwest from the subject property
- Michigan and Livernois Gas Station: 4201 Livernois, Detroit (Open LUST for gasoline, kerosene, and diesel), 1/4-1/2 mile west from the subject property
- Discount Muffler & Brakes Center: 4292 Livernois, Detroit (Open LUST for gasoline), 1/4-1/2 mile west from the subject property
- Professional Garment Service: 4701 Michigan Avenue, Detroit (Open LUST for "hazardous substance"), 1/4-1/2 mile east from the subject property
- F & H Mini Mart, Inc.: 4615 Michigan Avenue, Detroit (Open LUST for gasoline and kerosene), 1/4-1/2 mile east from the subject property
- City of Detroit: 4817 35th Street, Detroit, (Open LUST), 1/4-1/2 mile north-northwest from the subject property

Two UST sites are plotted <1/8-1/4 mile from the subject property:

- Hussein Saab: 5938 Michigan Avenue, Detroit (Closed UST site; four gasoline USTs were removed from the ground)
- Olympic Steel: 3600 Military Street, Detroit (Closed UST site; two USTs [diesel and an unknown product] removed from the ground)

One AST site is plotted <1/8 mile from the subject property:

- Barrys Industrial Catering: 5660 Michigan Avenue, Detroit (Closed AST site).

Five Baseline Environmental Assessment (BEA) sites are plotted <1/8-1/2 mile from the subject property:

- 5716 Partners, LLC, 5728 Michigan Avenue, Detroit
- Freetown Mini Mart, 4201 Livernois, Detroit
- Livernois Michigan Avenue, LLC, 4281 Livernois, Detroit
- Royal Cleaners (former), 4701 through 4709 Michigan Avenue, Detroit
- T. G. Cole, LLC, 3255-3261 Goldner Street, Detroit

Two Brownfield sites are plotted <1/8-1/2 mile from the subject property:

- Pitstop I-Fill-Up: 5938 Michigan Avenue, Detroit (No status is reported)
- City of Detroit- 4187 35th: 4187 35th, Detroit (The status is reported as "in progress")

Two AUL Engineering and Institutional Controls sites are plotted 1/8-1/4 mile from the subject property:

- Shell Service Station: 6228 Michigan Avenue, Detroit (The status is reported as "void")
- Shell Service Station: 6248 Michigan Avenue, Detroit (The status is reported as "pending")

Fifteen historical "auto stations" are plotted <1/8-1/4 mile from the subject property:

- Steve's Service Station, 5830 Michigan Avenue/subject property, Detroit (listed in 1940)
- Economy Garage Co., 5855 Michigan Avenue, Detroit (listed in 1921)
- Karamon Bros, 5861 Michigan Avenue, Detroit (listed in 1940)
- Metro Garage Service Co., 5907 Michigan Avenue, Detroit (listed in 1926)
- Martin Oil Service, 5938 Michigan Avenue, Detroit (listed in 1970)
- Henry Peltz, 5940 Michigan Avenue, Detroit (listed in 1926 and 1940)
- Bill and Casey's Michigan Joe Service, 5944 Michigan Avenue, Detroit (listed in 1956)
- John J. Nowak, 5730 Michigan Avenue, Detroit (listed in 1935)
- Thomas F. Krawck, 4085 Wesson Avenue, Detroit (listed in 1921)
- Texas Gas and Oil Co., 6109 Michigan Avenue, Detroit (listed in 1940 and 1956)
- Turniam Michigan and Military Service, 6131 Michigan Avenue, Detroit (listed in 1956)
- Military Michigan Service, 6201 Michigan Avenue, Detroit (listed in 1956, 1965, and 1970)
- Frank Krzanowski, 5711 Buchanan Street, Detroit- listed twice (listed in 1956, 1965, and 1970)
- ACE Collision Services, 5611 Buchanan, Detroit (listed in 1921, 1926, 1931, 1935, 1940, and 1956)

Eleven historical cleaners are plotted <1/8-1/4 mile from the subject property:

- Bright Cleaners, 5864 Michigan Avenue/subject property, Detroit (listed in 1956, 1965, and 1970)
- Walter I. Szuba, 3847 35th Street, Detroit (listed in 1956)
- Hee Ye, 3837 35th Street, Detroit (listed in 1926, 1931, 1935, and 1940)
- Excellent Cleaners, 5651 Michigan Avenue, Detroit (listed in 1965 and 1970)
- Emil Weingarten, 6149 Michigan Avenue, Detroit (listed in 1921)
- Geo Yee, 6146 Michigan Avenue, Detroit (listed in 1940)
- Sing Moy, 6166 Michigan Avenue, Detroit (listed in 1921, 1926, 1956, 1965, and 1970)
- Peter Welper, 5736 Buchanan, Detroit (listed in 1940)
- Leonard's Cleaners, 5716 Buchanan, Detroit (listed in 1956)
- F and M Cleaners, 3863 32nd, Detroit (listed in 1956)
- Model Tailors, 5418 Michigan Avenue, Detroit (listed in 1965)

4.3 Non-geocoded properties

EDR was unable to map fifty-nine properties. AEM Group researched these properties. None of the non-geocoded properties appear to correspond to the subject property or adjacent properties.

4.4 Michigan Department of Natural Resources and Environment

To assess past and current use of the subject property, AEM Group sent a Freedom of Information Act (FOIA) request to the MDNRE to review environmental files that pertain to the subject property.

On September 17, 2010, AEM Group filed a FOIA request with the MDNRE for information concerning the subject property. Ms. Susan Vorce, FOIA Coordinator, responded that the request for information was forwarded to the Air Quality Division, the Environmental Resource Management Division, the Remediation Division, and the Water Resources Division. Ms. Vorce stated that due to time constraints, it was necessary to issue an extension until October 11, 2010.

To date, responses have been received from the Air Quality Division, the Environmental Resource Management Division, and the Water Resources Division. The Environmental Resource Management Division and the Water Resources Division responded that no records existed within these departments for the subject property addresses within these departments. The MDNRE Air Quality Division indicated that a NESHAPS inspection for asbestos had been performed for the former building at 5840 Michigan Avenue prior to its demolition. No other Air Quality Division files were reported for the subject properties.

Appendix B provides a copy of the MDNRE FOIA request and responses.

4.5 Municipal records

4.5.1 City of Detroit Finance Department, Assessments Division

To determine the past uses of the subject property, AEM Group reviewed the City of Detroit Finance Department, Assessments Division files for the subject property parcels. As noted in Section 2.1, the subject property contains twelve parcels with individual parcel numbers. Multiple owners are indicated for the subject properties as indicated in Section 3.1. The Real Estate Summary Sheets for these parcels indicate that the subject property contains approximately 2.06 acres.

The Assessments Division files contained limited information for residential buildings at 4034 Wesson and 4007 Campbell and also for commercial structures on 5800, 5850, and 5864 Michigan Avenue. However, currently, only the 4034 Wesson Avenue parcel contains a structure.

4.5.2 City of Detroit Finance Department, Assessment Records Center

Building construction data in the Record Center files indicates additional information for the subject property parcels. This limited information includes:

- 4028 Wesson (Lot 7) - vacant lot; 0.09 acres
- 4034/38 Wesson (Lot 9) - two-family, two-story home with a garage, constructed in 1913 with a "stem" (sic) burner; H.A. gravity fed; 0.09 acres
- 4040/44 Wesson (Lot 11) - former two-family, two-story home; gas burner; 0.19 acres. A demolition permit was issued in June 1990 for this structure. A restrictive covenant has been placed on 4040 Wesson, which states that "No structure shall be erected, placed or permitted to remain on the land herein conveyed except and only as such is made and used as part and parcel of Lot 13, the abutting property of which the Grantee herein is the title holder". However, Lot 13 is not included in the subject property.
- 3951 Campbell (part of Lot 6) - former single-story home, no garage; constructed in 1900 with stove heat. A demolition permit was issued in June 1989 for this structure; 0.06 acres.

- 3957 Campbell (part of Lot 6) - former single-story home; constructed in 1900 with stove heat; gas burner. The building was removed in August 1976; 0.01 acres.
- 4007 Campbell (Lot 8) - former two-family, two-story home, garage, constructed in 1912 with stove heat; oil burner; 0.09 acres
- 5800 Michigan - former two-story supermarket; constructed 1914 with alterations in 1955; destroyed by fire in September 1999 and demolished; 0.83 acres. Additionally, the Assessments Division stated that the former address of 5830 Michigan Avenue had been incorporated into the 5800 file.
- 5840 Michigan - former two-story store/pet supplies store; constructed approximately 1880 and 1961; oil and later gas heat in southern portion. A demolition permit was issued in February 2005 for this structure; 0.13 acres
- 5848 Michigan - former two-story store and flat (former Ballaun Studio and Mr. D's Studio); constructed approximately 1901; steam heat; vacant land in 1991; 0.16 acres
- 5850 Michigan - former one-story store; constructed approximately 1929; steam heat; former Polar Bar and New Orleans Jazz; vacant land in 1992; 0.15 acres
- 5858 Michigan - former Sarnowski Greenhouse; "wreck and remove" permit in 1974; vacant land in 1993; 0.14 acres
- 5862/64 Michigan - former three-story "stores and flats"; former Bright Cleaners: "occ. both stores"; constructed approximately 1895; steam heat; vacant land in 1993; 0.12 acres

4.5.3 City of Detroit Planning Department

Inspector Bill Lane of this department stated that the subject property is zoned B-4 (General Business District) along Michigan Avenue and R-2 (residential one and two-family) north of the alley adjoining lots 7 and 8.

4.5.4 City of Detroit Law Department

Ms. Carol Brown of the City of Detroit Law Department reviewed files for the subject property concerning the Buildings and Safety Engineering Department. She provided limited records of permits for the 5800 Michigan Avenue address, which indicated its use as a former bowling alley and store.

4.5.5 City of Detroit Water and Sewerage Department

Ms. Vicki Seagraves of the City of Detroit Water and Sewerage Department stated that records for 4034 Wesson indicated that this building was on the city demolition list. Ms. Leticia Johnson stated that water and sewer services had been disconnected from this building on July 19, 2010.

No other structures remain on the subject property.

4.5.6 City of Detroit Fire Department

To assess past use of the subject property, AEM Group completed a FOIA request with the City of Detroit Fire Marshal for information concerning environmental concerns, spills, HAZMAT issues, and/or storage tanks that is contained in the department records for the subject property. Lt. Foster of the Fire Marshal Division reviewed the files for the subject property and stated that he had no records for the properties on Wesson Avenue or Campbell Avenue. He noted that the 5800-5808 Michigan Avenue address had formerly contained the Prince Valley Food Center, and Fire

Department inspections had indicated small quantities of floor finishes (35 containers) and deodorizers (32 containers). Lt. Foster also stated that the New Orleans Cocktail Lounge had occupied the 5850 Michigan Avenue address in the early 1980s. He stated that there were no other records for the subject property addresses.

4.6 County records

Mr. Eric Anderson, FOIA Officer for the Wayne County Department of Public Services, stated that no records were available for the subject property.

Appendix B provides a copy of the FOIA request and reply.

4.7 Physical setting sources

In order to determine the physical setting sources for the subject property, AEM Group reviewed readily available information and made visual observations during the site visit. The results of this information are presented below.

4.7.1 Topography

EDR reports the elevation of the subject property as 594 feet above sea level. Based on the site reconnaissance, the adjoining properties appear to have a relatively similar elevation.

4.7.2 Hydrology

AEM Group observed no surface water bodies on the subject property.

4.7.3 Hydrogeology

In order to determine groundwater flow direction, AEM Group attempted to utilize EDR's Aquiflow Information System (AIS) database. However, groundwater flow direction information within 1/2-1 mile of the subject property was reported as variable.

4.7.4 Wells

No potable water wells appear to be located at the subject property, which formerly was connected to municipal water service.

As noted above, the one remaining onsite structure was formerly connected to municipal water services. Ms. Leticia Johnson of the City of Detroit Water and Sewerage Department stated that 4034 Wesson had been disconnected from municipal water and sewer services on July 19, 2010.

Based on a review of the EDR report, which utilized the federal public water supply system well information database and the State of Michigan well database, no water wells are reported within one mile of the subject property.

5.0 Site history

To assess past use of the subject property, AEM Group researched records of historical fire insurance maps, historical topographic maps, historical aerial photographs, and city directories. The results of this research are as follows.

5.1 Previous environmental reports for the subject property

No prior environmental reports were provided for the subject property.

5.2 Historical records sources

5.2.1 Historic fire insurance maps

In order to assess past historical use of the subject property, AEM Group requested historical Sanborn fire insurance (Sanborn) maps. The following table provides a summary of the findings.

Date	Subject property description
1884	The subject property contains A. R. Sink's 3 Mile Hotel, horse shed, bowling alley, summer garden and a two-story building along Michigan Avenue.
1897	The Michigan Avenue portion of the subject property contains: a hotel, wagon shed, hall, residential properties, and stores. Residential properties are located on lots 6, 8, and 11.
1910	The Michigan Avenue portion of the subject property contains: two hotels, a horse shed, hall, residential properties, and stores. Residential properties continue to be located on lots 6, 8, and 11.
1924	The Michigan Avenue portion of the subject property contains: a bowling alley/billiards, stores, a filling station with one storage tank, a "photo" shop, a "vulcanizing" building, and residential properties. Residential properties are located on lots 6, 8, 9, and 11.
1941	The Michigan Avenue portion of the subject property contains: a bowling alley, stores, a filling station with three storage tanks, a "photo" shop, a greenhouse, and residential properties. Residential properties are located on lots 6, 8, 9, and 11.
1950	The subject property appears relatively similar to the previous Sanborn Map; however, a filling station is no longer indicated.
1952	The subject property appears relatively similar to the previous Sanborn Map.
1957	A store has replaced the bowling alley that was formerly located on the subject property. The Michigan Avenue portion of the subject property continues to contain stores, a "photo" shop, a greenhouse, and residential properties. Residential properties are loeated on lots 6, 8, 9, and 11.
1961	The subject property appears relatively similar to the previous Sanborn Map, although a feed warehouse is also indicated in the Michigan Avenue portion of the subject property.
1978	The subject property appears relatively similar to the previous Sanborn Map, although parking is indicated on lot 7.
1983	This Sanborn Map indicates that three stores have been removed from the southwestern area of the subject property.

1986	A large store and a feed warehouse continue to be indicated in the Michigan Avenue portion of the subject property. Residential properties continue to be indicated on lots 6, 8, 9, and 11, and parking is indicated on lot 7.
1989	The subject property appears relatively unchanged from the previous Sanborn Map, although a residential property has been removed from lot 6.
1992	The subject property appears relatively unchanged from the previous Sanborn Map, although a residential property has been removed from lot 11.
1996	The subject property appears similar to the previous Sanborn Map.
2002	A large store has been removed from the southeastern area of the subject property. The feed store along Michigan Avenue continues to be indicated, and residential properties continue to be shown on lots 8 and 9. Also, parking continues to be indicated on lot 7.

Appendix E contains copies of the historical Sanborn Maps.

5.2.2 Historic topographic maps

In order to assess past use of the subject property, AEM Group requested historical topographic maps from EDR. The following table provides a summary of the findings of the U.S.G.S. Detroit and Detroit Vicinity South NE, Michigan quadrangles.

Date	Description of subject property and adjoining properties
1905: Detroit	Due to the scale of the topographic map, no buildings are visible in the subject property area. Michigan Avenue is located adjacent to the south. Railroad tracks are located approximately 3,000 feet to the west.
1947: Detroit	It appears that only schools and large facilities are indicated as buildings on this map. As a result, no buildings are indicated on the subject property or adjoining properties. Surrounding roads are visible.
1952: Detroit/ Detroit Vicinity South NE	Urban shading, which indicates high building density, is used to denote the subject property area. Although buildings are not indicated, the surrounding roads are shown.
1968: Detroit	The subject property and adjoining properties appear similar to the previous topographic map.
1973: Detroit	The subject property and adjoining properties appear similar to the previous topographic map.
1980: Detroit	Urban shading continues to be used in the subject property area. The subject property and adjoining properties appear similar to the previous topographic map.

Appendix F provides copies of the historical topographic maps.

5.2.3 Historic aerial photographs

In order to assess the past use of the subject property, AEM Group requested historical aerial photographs from EDR. The following table provides a summary of the findings.

Date	Description of subject property and adjoining properties
1937	The images of this aerial photograph are indistinct, although buildings are visible on the subject property and in the surrounding area. A large industrial building is visible approximately 0.1 mile to the southwest across Michigan Avenue.
1949	Large buildings occupy portions of the subject property along Michigan Avenue. Residential-type buildings are indicated on lots 6, 8, 9, and 11. Commercial and industrial buildings are indicated in the surrounding area along Michigan Avenue, and residential buildings are located adjoining the Michigan Avenue corridor.
1957	An expanded parking lot is indicated for the large building that is located in the southeastern area of the subject property, and it appears that a small building has been removed from lot 6. The remaining areas of the subject property and the adjoining properties appear relatively unchanged compared to the previous photograph.
1961	The subject property and the adjoining properties appear relatively similar to the previous photograph. Parking is visible on lot 7.
1972	The subject property and the adjoining properties appear similar to the previous photograph.
1985	Buildings appear to have been removed from the southwestern area of the subject property, and only one building remains in this area of the subject property. A large building continues to be shown in the southeastern area of the subject property along Michigan Avenue and Campbell Avenue. Commercial and industrial-type buildings are indicated along Michigan Avenue and residential-type buildings are shown in the adjoining areas. However, some buildings have been removed in the surrounding area since the previous photograph.
1993	Although the aerial photograph is not distinct, it appears that two buildings remain on the subject property along Michigan Avenue. Also, it appears that a residential-type building has been removed from lot 6.
2000	A large building has been removed from the southeastern area of the subject property along Michigan Avenue. Residential buildings on the subject property appear to be located on lots 8 and 9, and a commercial building continues to be indicated along Michigan Avenue.
2005	No buildings remain on the subject property along Michigan Avenue; however, residential buildings appear to be located on lots 8 and 9. Commercial and industrial buildings continue to be indicated along Michigan Avenue, and residential properties adjoin the commercial/industrial properties. Additional buildings have been removed in the surrounding area.

Appendix F provides copies of historical aerial photographs.

5.2.3 *City directory listings*

In order to assess past use of the subject property, AEM Group requested historical city directory information from EDR. The following table provides a summary of the findings as listed by EDR, which were obtained from Polk's City Directories and Bresser's Criss-Cross Directories.

Year	5800 Michigan	5840 Michigan	5848 Michigan
1921	Vavascos Bros. Restaurant	Residential	Ziawinski Bros. (photographer)
1926	Granada Restaurant	Residential	Joseph Ziawinski (photographer)
1931	Milady Hat Shop	Vacant	Joseph Ziawinski (photographic goods)
1935	Kock & Steelow (beer garden)	Residential	W. Ballaun (photographer)
1940	Alcona Recreation Co. (bowling)	Residential	Stanley Ballaun (photographer)
1956	-	Skippy's Auto Stores (storage)	Ballaun Studio (portrait copying)
1964	National Food Stores, Inc.	Vacant	Ballaun Studio (commercial photographer)
1968	A & P Food Stores	Vacant	Ballaun Studio (commercial photographer)
1973	-	-	Ballaun Studio / Mr. D's Studio
1978	Paramount Supermarket / Prince Valley Food	-	Ballaun Studio / Mr. D's Studio
1983	Paramount Supermarket / Prince Valley Food Center	-	-
1988	Paramount Supermarket / Prince Valley Food Center / Prince Valley Video	-	-
1993	Paramount Supermarket / Prince Valley Food Center / Western Union	-	-
1998	Paramount Supermarket / Prince Valley Food Center	-	-
2003	-	-	-
2008	-	-	-

Year	5850 Michigan	5858 Michigan	3951 N. Campbell
1921	Residential	Joseph Carda (billiards)	Residential
1926	Residential	Harry J. Sarnowski (florist)	Residential
1931	Residential	Harry J. Sarnowski (florist)	Residential
1935	Eug. Polderdyke (restaurant)	Harry J. Sarnowski (florist)	Residential
1940	Ignaty T. Ponedelnik (restaurant)	Frank J. Zielinski(optometrist); Harry J. Sarnowski (florist)	Residential
1956	Polar Bear Bar	Harry J. Sarnowski (florist)	Residential
1964	Polar Bear Bar	Harry J. Sarnowski (florist)	Residential
1968	Polar Bear Cafe	Harry J. Sarnowski (florist)	Residential
1973	Polar Bear Cafe	-	-
1978	-	-	-
1983	-	-	-
1988	-	-	Residential
1993	-	-	-
1998	-	-	-
2003	-	-	-
2008	-	-	-

Year	3957 N. Campbell	4034 Wesson	4046 Wesson
1921	Residential	Residential	Residential
1926	Residential	Residential	Residential
1931	Residential	Vacant	Residential
1935	Residential	Residential	Residential
1940	Residential	Residential	Residential
1956	Residential	Residential	Residential
1964	Residential	Residential	Residential
1968	Residential	Residential	Residential
1973	Residential	Residential	Residential
1978	-	Residential	Residential
1983	-	Residential	Residential
1988	-	-	Residential
1993	-	Residential	Residential
1998	-	Residential	Residential
2003	-	-	-
2008	-	-	Residential

Appendix H provides the EDR City Directory report. EDR reported that no city directory records were found for 4028 Wesson Street or 5862 Michigan Avenue. In addition, the original subject property addresses provided to AEM Group did not include 4040/44 Wesson or 4007 N. Campbell, and as a result, these addresses were not researched by EDR. However, based on aerial photographs and municipal files, both of these addresses appear to have been used as residential properties.

5.3 Summary of historical use information

A review of the available sources of information for the subject property revealed that the subject property was developed with commercial and residential properties by the late 1800s.

Businesses were indicated on the historical Sanborn Maps for the subject property that have the potential for impacting the soils and groundwater. These include: a "filling" station with gasoline storage tanks (5830 Michigan), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a "photo" shop (5848/50 Michigan), a greenhouse (adjoining north of 5856/58 Michigan), and automobile parking. Also, historical municipal records indicate that 5862/64 Michigan contained Bright Cleaners. In addition, both residential and commercial properties may have used coal and/or heating oil, which also have a potential for impacting the subject property soils and groundwater.

6.0 Site reconnaissance

AEM Group conducted a site reconnaissance of the subject property on September 29, 2010. Ms. Carol Wolff conducted a visual inspection of the subject property for AEM Group. Visual observations were also made of tbe adjoining properties.

Ms. Cheryl Frost provided a site plan for the subject property, which indicated parcel numbers, to facilitate the site visit. Mr. Joe Gappy (an owner) responded to questions concerning subject property parcels that were owned by members of his family (Hani Y. Gappy, City Houses, LLC, and Jeffrey Gappy et al).

Details of the site reconnaissance are discussed in the following text.

6.1 Methodology and limiting conditions

During the site visit to the subject property, observations were made regarding evidence of potential environmental concerns and/or Recognized Environmental Conditions (RECs) such as stained surface soil, material storage practices, and general land use around the subject property. Photographs were taken to illustrate site conditions and are provided as a separate section following the figures.

6.2 General site setting

As noted in Section 2.6, the subject property is located in a mixed-use area containing commercial, industrial, and residential buildings.

The subject property is surrounded by: (north) residential properties; (east) Campbell Avenue, followed by former commercial properties undergoing redevelopment and residential properties; (southeast) Michigan Avenue, followed by a U.S. Social Security Administration building; (south) Michigan Avenue, followed by Michigan Animal Hospital and vacant buildings; (southwest) Michigan Avenue, followed by Gigante Supemercado, Olympic Steel/Tri Star Steel, and Powr Shower; and (west) Wesson Avenue, followed by an apartment building and residential properties, Joe Street, and Autorama.

6.3 Public utilities

The City of Detroit Water and Sewerage Department formerly supplied water and sanitary sewer services to the former subject property buildings. Ms. Leticia Johnson stated that these services had been disconnected from the only remaining onsite building (4034 Wesson) on July 19, 2010. DTE Energy provides electricity, and MichCon, a subsidiary of DTE, provides natural gas for the subject property area.

6.4 Exterior observations

The combined acreage of the subject property parcels is approximately 2.06 acres based on City of Detroit Assessing Department records.

Only one structure remains on the subject property. A fire-damaged former two-story duplex residence is located in the northwestern area of the subject property on parcel 9 (4034/38 Wesson Avenue). The fire destroyed the garage, which formerly was located to the east of the home. Debris is present in the yard between the home and garage and behind the garage.

An unknown cylindrical structure (approximately 33 inches by 12.5 inches) was observed at 4028 Wesson Avenue (Photograph 6), which may be associated with underground venting, although its purpose is unknown.

The majority of the remaining areas of the subject property are grass-covered with scattered trees, although unpaved areas are present. An unpaved path traverses the property from Michigan Avenue to Campbell Avenue. An unpaved alley, which is situated in a north-south direction, is located between the rear of the parcels on Wesson Avenue and the rear of the parcels on Campbell Avenue. Another unpaved alley is situated south of lots 7 and 8. An unpaved parking area is located in the western area of the subject property, along Wesson Avenue and south of lot 7.

Construction debris, which included small piles of concrete, bricks, asphalt, and wood, was observed on the subject property, as well as small piles of soil and consumer product debris, such as tires, plastic, paper, and metal debris. These materials are located in the vicinity of the alleys and are also located in the approximate center of the subject property.

No staining was observed on the unpaved surfaces of the subject property, although some surfaces were obscured by debris or vegetation.

A site vicinity map for the subject property is provided in Figure 2.

6.5 Interior observations

The interior of the fire-damaged two-story duplex residence on parcel 9 (4034/38 Wesson Avenue) was not accessed due to the unsound nature of the structure, although observations were made through exterior windows. No environmental concerns were noted through these limited observations.

6.6 Additional observations

6.6.1 *Underground/aboveground storage tanks*

No records of underground storage tanks at the subject property were discovered during a file review of the City of Detroit Fire Marshal records. Mr. Joe Gappy stated that he has no knowledge of underground storage tanks at the subject property. However, based on a review of the EDR Radius Map report (Section 4.2), the subject property is listed in the state supplemental standard databases as an historical auto service station (Steve's Service Station, 5830 Michigan Avenue) and also as an historical cleaner (Bright Cleaners, 5864 Michigan Avenue). Both underground and aboveground storage tanks may have been present at these operations.

In addition, historical storage tanks may have been associated with a "vulcanizing" building (adjoining north of 5836/40 Michigan), a greenhouse (adjoining north of 5856/58 Michigan), and residential and commercial properties that may have used heating oil.

6.6.2 *Pits, ponds, lagoons, pools of liquid*

AEM Group did not observe evidence of pits, ponds, or pools of liquid on the subject property, with the exception of pools of water from a recent rain event.

6.6.3 *Staining or evidence of chemical release*

AEM Group observed *de minimis* staining at the subject property.

It is assumed that chemical releases may have occurred from historic spills and storage operations at the former Michigan Avenue subject property operations (a "filling" station, a "vulcanizing" building, a "photo" shop, a greenhouse, a cleaners, and automobile parking) as well as during a fire at the residence on parcel 9 (4034/38 Wesson Avenue). In addition, both residential and commercial properties may have used coal and/or heating oil, which also have a potential for impacting the subject property soils and groundwater.

6.6.4 Stressed vegetation

AEM Group did not observe evidence of stressed vegetation at the subject property, with the exception of unpaved areas that appear to be worn from foot traffic.

6.6.5 Storm water

Exterior surfaces appear to drain by sheet action to the municipal combined sewer system.

6.6.6 Septic systems

AEM Group did not observe evidence of septic systems at the subject property. Ms. Vicki Seagraves of the City of Detroit Water and Sewerage Department stated that city water and sewer services formerly were connected to 4034/38 Wesson Avenue prior to its being placed on the demolition list. Municipal sewer services were formerly supplied to the former subject property buildings.

6.6.7 Wells

AEM Group did not observe evidence of potable water wells at the subject property. Municipal water services were formerly supplied to the former subject property buildings.

6.6.8 Odors

AEM Group did not detect evidence of odors at the subject property at the time of the site reconnaissance.

6.6.9 Fill dirt

At the time of the site reconnaissance, AEM Group observed several small piles of soil on the subject property, which were approximately two to three feet in diameter.

6.6.10 Transformers/Polychlorinated Biphenyls (PCBs)

Pole-mounted transformers are located in the public alley between the rear of the parcels on Wesson Avenue and those on Campbell Avenue.

6.6.11 Solid waste disposal

No containers for solid waste disposal were observed onsite. As noted in Section 6.4, areas of debris were noted onsite.

6.6.12 Heating system

Because the former onsite buildings were constructed beginning in the late 1880s and operated over many decades, it is assumed that a variety of sources of heat may have been used for the subject property buildings. There is a potential that heat may have been supplied by wood, coal, oil, and/or natural gas. A variety of heating systems are noted in municipal records for the former onsite buildings; these included: steam, oil, natural gas burner, and stove.

6.6.13 Hazardous substance/petroleum product containers

Based on historical Sanborn Maps, it is assumed that several former onsite operations may have used and stored hazardous substances in containers. These include: a "filling" station (gasoline and motor oil products at 5830 Michigan), a "vulcanizing" building (sulphur and accelerators such as lead or zinc oxide, adjoining north of 5836/40 Michigan), a "photo" shop (fixers, developers, and silver at 5848/50 Michigan), a greenhouse (herbicides and rodenticides, adjoining north of 5856/58 Michigan), and automobile parking (petroleum products associated with both the former businesses and residences). Also, historical municipal records indicate that 5862/64 Michigan contained a

cleaners (solvents). In addition, both residential and commercial properties may have used coal and/or heating oil, which also have a potential for impacting the soil and groundwater.

6.6.14 Use of hazardous chemicals/petroleum

Currently, no operations occur onsite. However, as noted above in Section 6.6.13, it is assumed that a variety of hazardous chemicals and petroleum products would have used during the former onsite activities. In addition, it is assumed that maintenance, housekeeping, and landscaping chemicals previously have been utilized during typical operations on the subject property.

6.6.15 Hazardous waste disposal

No records of hazardous waste disposal were provided for the subject property, and none were indicated for the subject property in the EDR Radius Map Report. However, AEM Group observed several small piles of soil, which had been deposited on the subject property. The source of this soil is unknown.

6.6.16 Floor drains

With the exception of the former residence at 4034/38 Wesson Avenue, no buildings remain onsite. No access was provided to this structure because of safety issues.

7.0 Interviews

AEM Group conducted interviews to obtain information regarding the subject property and adjoining properties. The information from these interviews is discussed in the following text.

7.1 Interview with owner's representative

Mr. Joe Gappy, was interviewed on September 29, 2010. Mr. Gappy provided information concerning the subject properties that he owned (Joe Gappy and Cardiff Properties) and those that were owned by members of his family (Hani Y. Gappy, City Houses, LLC, and Jeffrey Gappy et al). He indicated that his family owned the subject property along Michigan Avenue between Wesson Avenue and Campbell Avenue and also the subject property home at 4034 Wesson Avenue that was currently fire-damaged. Mr. Gappy noted that a supermarket was formerly located at 5800 Michigan Avenue, which his family owned and operated from 1975 until it was destroyed by fire in 1999, and was later demolished. He stated that natural gas was used to heat the supermarket. He also indicated that a pet store/antique shop was located at 5840 Michigan Avenue, which he purchased in approximately 2004 and then demolished. He noted that he had purchased 5862 Michigan Avenue from the City of Detroit. Mr. Gappy stated that his family had purchased the subject property parcels in order to accumulate land for a new grocery store. He also stated that he has no knowledge of storage tanks or environmental concerns on the subject property, with the exception of "dirt on top".

Mr. Gappy completed the Phase I Owner Questionnaire that is included in Appendix C.

Ms. Janay Mallet Eisenmenger stated that 4034 Wesson was owned by Southwest Housing Solutions. She stated that no environmental investigation had been conducted by Southwest Housing Solutions prior to their purchase of this home, although asbestos materials would be remediated at this fire-damaged property prior to demolition. Ms. Eisenmenger did not respond to a request to complete a Phase I Owner Questionnaire.

No response for information was received from the City of Detroit Planning & Development Department, and no contact information was provided for Washington Mutual Bank, which are also listed as subject property owners.

7.2 Interview with key site manager

Currently, the subject property is owned by several entities as noted above. No additional key site manager appears to be associated with the subject property.

7.3 Interviews with tenants

No tenants currently occupy the subject property.

7.4 Interviews with local government officials

AEM Group interviewed municipal, county, and state representatives concerning the subject property, as described in Section 4.

7.5 Interviews with past owners/operators

No contact information was provided for representatives of past owners/operators.

8.0 Findings

AEM Group has performed a Phase I Environmental Site Assessment of the subject property in conformance with the scope and limitations of ASTM E1527-05 of the properties located at 5800-5864 Michigan Avenue, the adjoining parcels 7, 9, and 11 on Wesson Avenue (4028-4044 Wesson Avenue) and the adjoining parcels 6 and 8 on Campbell Avenue (3951-4007 Campbell Avenue), Detroit, Wayne County, Michigan 48210. Any exceptions to, or deletions from, this practice are described in Section 12 of this report.

Based on municipal records and Sanborn Maps, the subject property was partially developed with commercial and residential properties by the late 1800s. The construction dates of the former onsite structures ranged from approximately 1880-1961. No records were available to determine the sources of heat for these former onsite buildings, although it is assumed that wood, coal, oil, and/or natural gas may have been used for heating purposes. No records were available to indicate whether former heating oil storage tanks were used onsite or remain underground. Historically, heating oil storage tanks were not required to be registered with governmental agencies.

Businesses were indicated on the historical Sanborn Maps for the subject property that have the potential for impacting the soils and groundwater. These include: a "filling" station with gasoline storage tanks (5830 Michigan), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a "photo" shop (5848/50 Michigan), a greenhouse (adjoining north of 5856/58 Michigan), and automobile parking. Also, historical municipal records indicate that 5862/64 Michigan contained Bright Cleaners.

At the time of the site reconnaissance, 5800, 5840, 5848, 5850, 5858, and 5862/64 Michigan Avenue, 4028 and 4040/44 Wesson Avenue, and 3951, 3957, and 4007 Campbell Avenue contained vacant land with scattered debris; 4034/38 Wesson Avenue contained a fire-damaged duplex residence and garage. The subject property is located in a mixed-use area containing residential, commercial, and industrial properties. EDR lists sites of potential environmental concern in the surrounding area.

The combined acreage of the subject properties is approximately 2.06 acres based on City of Detroit Assessing Department records. Multiple owners are indicated for the subject properties. In addition, a restrictive covenant has been placed on 4040 Wesson, which states that "No structure shall be erected, placed or permitted to remain on the land herein conveyed except and only as such is made and used as part and parcel of Lot 13, the abutting property of which the Grantee herein is the title holder". However, Lot 13 is not included in the subject property.

8.1 Known or suspect Recognized Environmental Conditions (RECs)

Based upon the site reconnaissance and review of available information, AEM Group has identified the following Recognized Environmental Conditions (RECs) at the proposed Children's Outreach property:

- potential impacts from former onsite operations- the property has been utilized for a former historical gasoline station (5830 Michigan Avenue), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a photo shop (5848/50 Michigan Avenue), a greenhouse (adjoining north of 5856/58 Michigan), a cleaners (5862/64 Michigan Avenue), and automobile parking. It is assumed that chemicals and/or petroleum products were used and stored at these locations, which may have caused historic spills/releases
- no records were available to confirm the removal of the former onsite gasoline storage tanks at the "filling" station

- no records were available to determine whether heating oil storage tanks formerly were used onsite or remain underground
- fire damaged the former residence and garage at 4034/38 Wesson Avenue, which may have introduced hazardous materials to the subsurface soils and groundwater from onsite chemicals, oils, and materials that were damaged in the fire and also from fire-suppression chemicals
- construction debris, which included concrete, bricks, asphalt, and wood, was observed on the subject property, as well as tires, plastic, metal debris, and small piles of soil that were approximately 2-3 feet in diameter
- asbestos-containing materials and lead-based paints may be present in the building at 4034/38 Wesson Avenue due to the age of the onsite construction materials
- an unknown cylindrical structure (approximately 33 inches by 12.5 inches) was observed at 4028 Wesson Avenue, which may be associated with underground venting, although its purpose is unknown
- surrounding properties are listed as potential sites of environmental concern in the surrounding area.

8.1 Historical Recognized Environmental Conditions

As noted above, Recognized Environmental Conditions are associated with previous onsite historical operations. There are no records to indicate that investigations or remedial activities in connection with these former operations have occurred.

8.2 *De minimis* conditions

At the time of the site visit, *de minimis* staining was noted on some exterior surfaces.

9.0 Opinion

Based upon the information collected during the research of the subject property, the site reconnaissance, and the interviews conducted, it is our professional opinion that the subject property has the potential to have been impacted by the Recognized Environmental Conditions discussed in Section 8.0.

Recognized Environmental Conditions were identified at the subject property due to the potential presence of hazardous substances and/or petroleum products that may be associated with previous onsite operations and activities. The environmental impact to the subject property includes not only onsite RECs, but also potential releases from surrounding properties.

As a result of these Recognized Environmental Conditions, AEM Group recommends that an additional investigation of these issues should be conducted.

10.0 Conclusions

AEM Group was retained by Children's Outreach to perform a Phase I Environmental Site Assessment, in conformance with the scope and limitations of ASTM Practice E1527, of the properties located at 5800-5864 Michigan Avenue, the adjoining parcels 7, 9, and 11 on Wesson Avenue (4028-4044 Wesson Avenue), and the adjoining parcels 6 and 8 on Campbell Avenue (3951-4007 Campbell Avenue), Detroit, Wayne County, Michigan 48210. Any exceptions to, or deletions from, this practice are described in Section 12 of this report.

Based upon the information collected during the research of the subject property, the site reconnaissance, and the interviews conducted, it is our professional opinion that this assessment has revealed Recognized Environmental Conditions (RECs) in connection with the subject property, which has been utilized since the 1880s.

These RECs include:

- potential impact from former onsite operations- the property has been utilized for a former historical gasoline station (5830 Michigan Avenue), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a photo shop (5848/50 Michigan Avenue), a greenhouse (adjoining north of 5856/58 Michigan), a cleaners (5862/64 Michigan Avenue), and automobile parking. It is assumed that chemicals and/or petroleum products were used and stored at these locations, which may have caused historic spills/releases
- no records were available to confirm the removal of the former onsite gasoline storage tanks from the former "filling station"
- no records were available to determine whether heating oil storage tanks formerly were used onsite or remain underground
- fire damaged the former residence and garage at 4034/38 Wesson Avenue, which may have introduced hazardous materials to the subsurface soils and groundwater from onsite chemicals, oils, and materials that were damagad in the fire and also from fire-suppression chemicals
- construction debris, which included concrete, bricks, asphalt, and wood, was observed on the subject property, as well as tires, plastic, metal debris, and small piles of soil that were approximately 2-3 feet in diameter
- asbestos-containing materials and lead-based paints may be present in the building at 4034/38 Wesson Avenue due to the age of the onsite construction materials
- an unknown cylindrical structure (approximately 33 inches by 12.5 inches) was observed at 4028 Wesson Avenue, which may be associated with underground venting, although its purpose is unknown
- surrounding properties are listed as potential sites of environmental concern in the surrounding area

Recognized Environmental Conditions were identified at the subject property due to the potential presence of hazardous substances and/or petroleum products that may be associated with previous onsite operations and activities. The environmental impact to the subject property includes not only onsite RECs, but also potential releases from surrounding properties.

As a result of these Recognized Environmental Conditions, AEM Group recommends that an additional investigation of these issues should be conducted.

11.0 Limitations and conditions

AEM Group performed this Phase I ESA in accordance with ASTM standards, the AEM Group standard scope of work for environmental services, and generally accepted practices followed by other consultants performing similar investigations under similar conditions in the area. In performing this Phase I ESA, AEM Group provided the degree of care and skill generally exercised by other consultants under similar circumstances and conditions.

The findings and conclusions in this document represent the opinions of AEM Group professionals and are based upon information reasonably ascertainable during the course of this investigation. AEM Group prepared this Phase I report based on information provided by government officials, other parties, and information contained in the files of state and local regulatory agencies available at the time this Phase I ESA was conducted. The accuracy of the conclusions made from this information is inherently based on the accuracy of the information provided by others.

It must be recognized that the limited scope of services may have precluded recognition of contamination at the subject property. Negative findings in this report cannot be interpreted as a warranty, expressed or implied, that no contamination exists at the property, and AEM Group cannot be held liable for damages if contamination of some type is discovered in the future. AEM Group does not provide legal advice; only a qualified attorney should provide legal interpretation of the results of the investigation or the condition of the site. No other warranty, either expressed or implied, is made.

As indicated in the report, visual observations of the subject property and its existing structures were made as part of the investigation. AEM Group renders no opinion as to the presence of hazardous materials or oils, or to the presence of indirect evidence relating to hazardous materials or oils, where access to portions of the subject property or to structures on the subject property was unavailable or where restricted direct observation of interior walls, floors, or ceilings of a structure or exterior surfaces was obstructed by objects or coverings on or above those surfaces.

The purpose of this investigation was to assess the physical characteristics of the subject property with respect to the presence of hazardous materials or oils in the environment. This report should not be construed as verification of compliance of the subject property with federal, state, or local laws or regulations, environmental or otherwise. Similarly, no testing or analysis to determine the presence of asbestos, lead, mold, or polychlorinated biphenyls (PCBs) was performed, unless noted. However, these out-of-scope issues may be provided at the client's request.

12.0 Deviations

The subject property is owned by multiple owners. However, no contact information was provided for Washington Mutual Bank concerning the 4007 Campbell Avenue subject property. Only a limited response for information was received from the City of Detroit Planning & Development Department. Also, no contact information was provided for representatives of past owners/operators.

13.0 References

American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process: ASTM E1527-05*

Detroit, Michigan Quadrangle (1980) and Dearborn, MI Quadrangle (1983) topographic maps

City of Detroit Finance Department, Assessments Division and Assessment Records Center records

City of Detroit Planning Department records

City of Detroit Buildings, Safety, Engineering, and Environmental Department

City of Detroit Water and Sewerage Department records

City of Detroit Fire Department records

EDR Aerial Photo Decade Package

EDR City Directory Abstract

EDR Historical Topographic Map Report

EDR Environmental LienSearch™ Report

EDR Radius Map with GeoCheck® prepared by Environmental Data Resources, Inc. (EDR), dated September 16, 2010

EDR Sanborn® Map Report

Wayne County Department of the Public Services records

State of Michigan Department of Natural Resources and Environment records

14.0 Signatures of environmental professionals

14.1 Signatures

Phase I Environmental Site Assessment Report

For the subject property located at:

- 5800-5864 Michigan Avenue; the adjoining parcels 7, 9, and 11 on Wesson Avenue (4028-4044 Wesson Avenue), and the adjoining parcels 6 and 8 on Campbell Avenue (3951-4007 Campbell Avenue), Detroit, Wayne County, Michigan 48210

Prepared for: Children's Outreach

Prepared by: Advanced Environmental Management Group
44339 Plymouth Oaks Blvd.
Plymouth, MI 48170-2585

Prepared on: November 1, 2010

AEM Group PN: _____ **PN-2100908**

Carol A. Wolff, MS Carol Wolff **Date** 11-1-10
Senior Project Manager

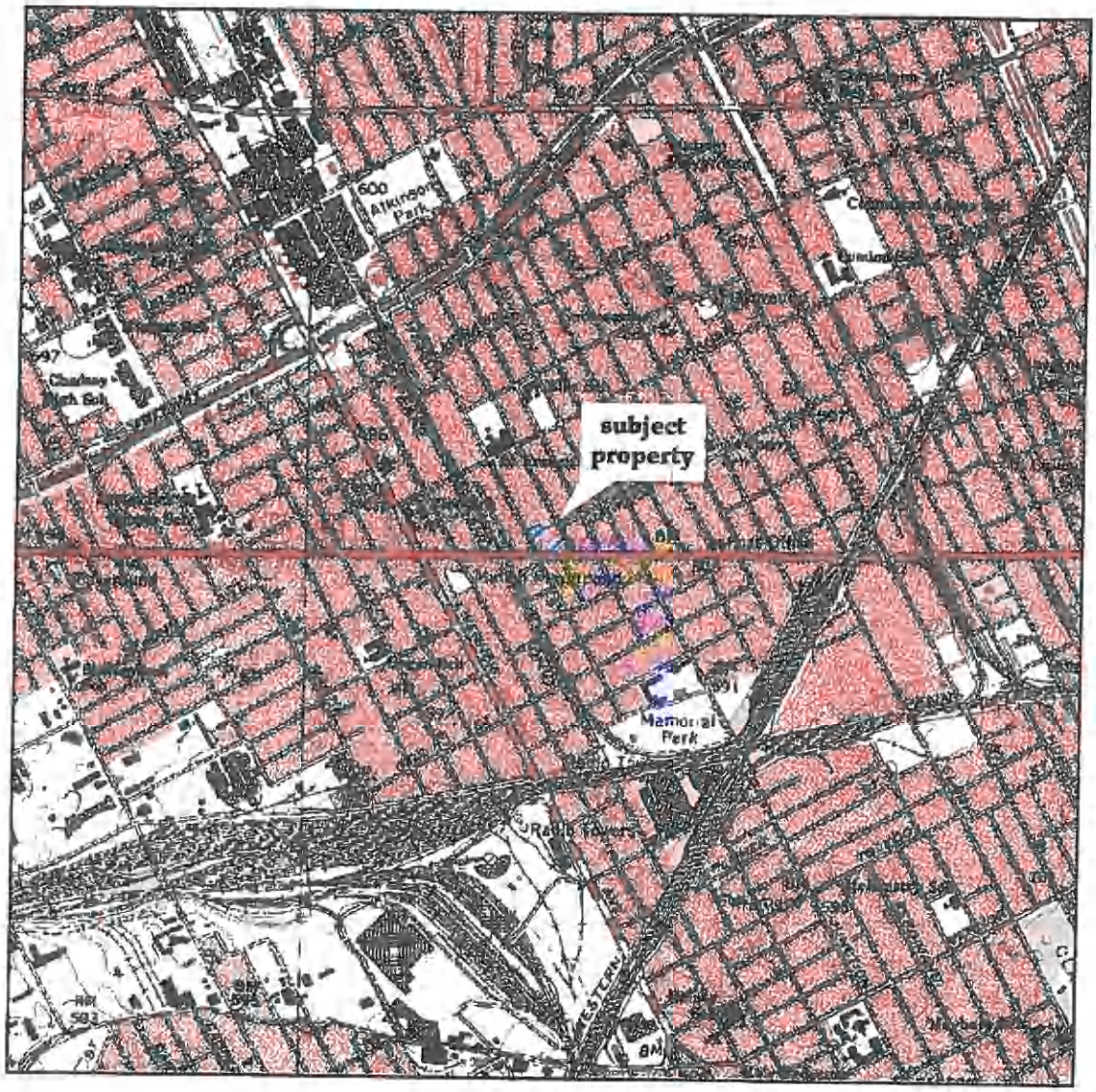
Stephen Gorham, P.E., CHMM Stephen Gorham **Date** 11/2/10
Project Manager

Copies of the qualifications of the environmental professionals identified above are presented in Appendix I.

14.2 Environmental professional statement

As required by 40 CFR 312.21 (d), the following statement is included:

I, Carol Wolff, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312, and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

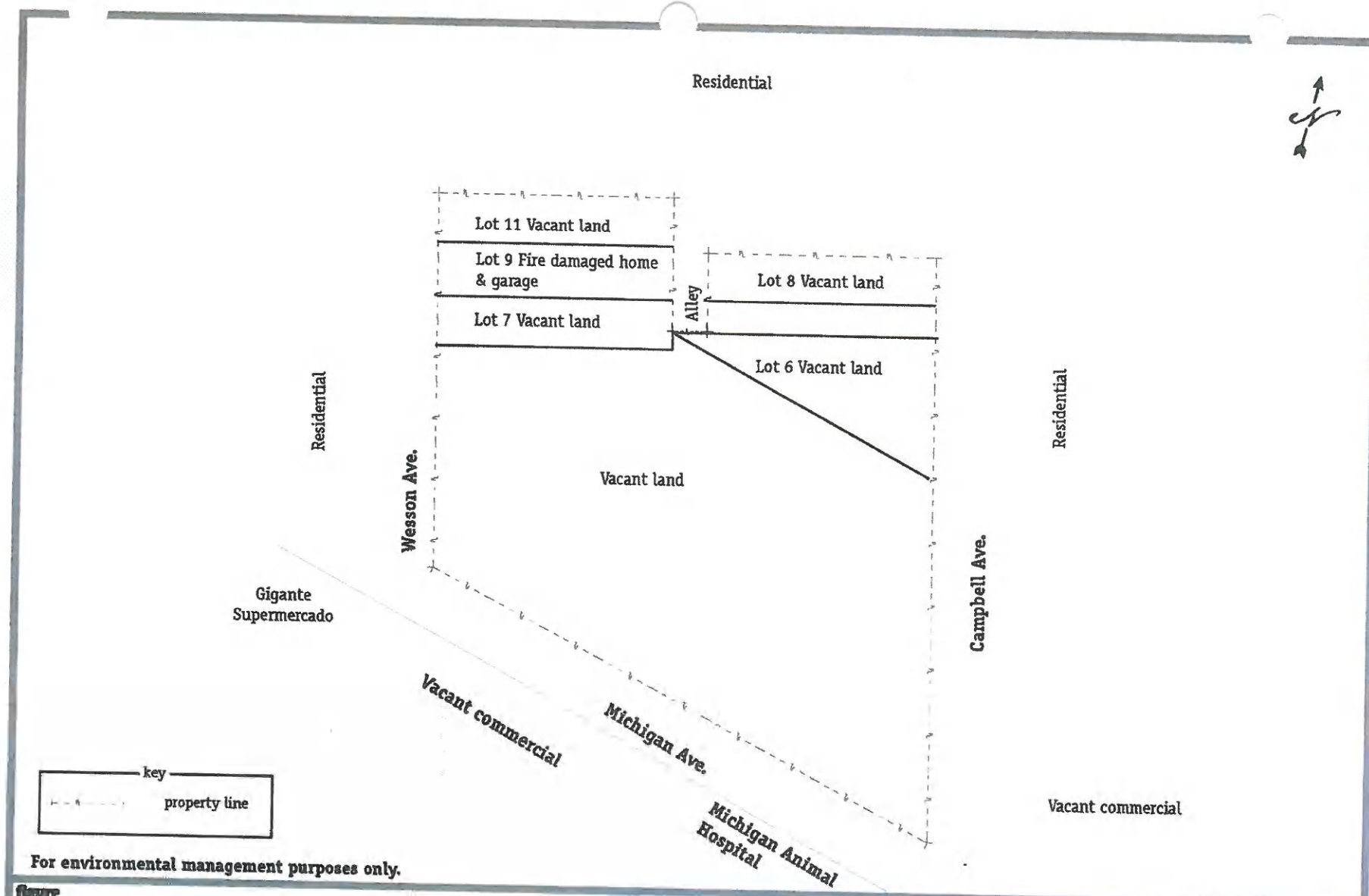


USGS Detroit quadrangle
Michigan
7.5 minute topographic series
photorevised 1980

For environmental management purposes only.

figure Site location map			
client Children's Outreach	**date** 14 October 2010	**drawn by** MD	**rev. no.**
facility 5800-5864 Michigan Ave., 4028-4044 Wesson Ave., 3951-4007 Campbell Ave., Detroit, MI	**scale** *see above*	**project no.** PN-2100908	

Advanced Environmental Management Group
voice: 1-734-354-9070
fax: 1-734-354-9087
www.environmental-help.com



For environmental management purposes only.

figure Site vicinity map				**Advanced Environmental Management Group** voice: 1-734-354-9070 fax: 1-734-354-9087 www.environmental-help.com
client Children's Outreach	**date** 14 October 2010	**drawn by** MD	**rev. no.**	
facility 5800-5864 Michigan Ave., 4028-4044 Wesson Ave., 3951-4007 Campbell Ave., Detroit, MI	**scale** *no scale*	**project no.** PN-2100908		

AKTPEERLESS
environmental & energy services

PHASE II ENVIRONMENTAL SITE ASSESSMENT
5800 THROUGH 5864 MICHIGAN AVENUE, 4028 THROUGH 4044 WESSON AVENUE, AND 3951 THROUGH 4007 CAMPBELL AVENUE
DETROIT, MICHIGAN 48210

prepared for

DETROIT/WAYNE COUNTY PORT AUTHORITY
8109 EAST JEFFERSON AVENUE
DETROIT, MICHIGAN 48214

and

CHILDREN'S OUTREACH
P.O. BOX 10509
DETROIT, MICHIGAN 48210

AKT PEERLESS PROJECT NO. 6861F-1-20
JANUARY 7, 2011

AKTPEERLESS
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PHASE II ENVIRONMENTAL SITE ASSESSMENT

5800 THROUGH 5864 MICHIGAN AVENUE, 4028 THROUGH 4044 WESSON AVENUE, AND 3951 THROUGH 4007 CAMPBELL AVENUE DETROIT, MICHIGAN 48210

AKT PEERLESS PROJECT NO. 6861F-1-20

1.0 INTRODUCTION

Children's Outreach (the User and Developer) retained AKT Peerless Environmental & Energy Services (AKT Peerless) through the Detroit / Wayne County Port Authority (DWCPA, the Client) to conduct a Phase II Environmental Site Assessment (Phase II ESA) of a property located at 5800 through 5864 Michigan Avenue, 4028 through 4044 Wesson Avenue, and 3951 through 4007 Campbell Avenue, Detroit, Wayne County, Michigan (subject property). The DWCPA was awarded a United States Environmental Protection Agency (USEPA) Brownfield Assessment Grant to conduct environmental assessments of petroleum sites. This Phase II ESA was conducted as part of Petroleum Assessment Grant No. 3.

This Phase II ESA was conducted in accordance with AKT Peerless' Proposal for a Phase II ESA (Proposal Number PF-11506), dated December 2, 2010, Phase II Sampling and Analysis Plan (SAP), dated December 2, 2010, and approved by the US EPA on December 13, 2010, and is based on American Society for Testing and Materials (ASTM) Designation E 1903-97 *"Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process."*

This Phase II ESA scope of work is intended to evaluate the recognized environmental conditions (RECs) identified in the Phase I ESA completed by Advanced Environmental Management Group (AEMG) on behalf of Children's Outreach, dated November 1, 2010 and presented in Section 2.4.1. This Phase II ESA scope of work does not evaluate the following:

- Asbestos
- Mold
- Lead-Based Paint

AKT Peerless' Phase II ESA report documents the field activities, sampling protocols, and laboratory results. AKT Peerless' Phase II ESA was performed for the benefit of the Developer and Client who may rely on the contents and conclusions of this report.

2.0 BACKGROUND

2.1 SITE DESCRIPTION AND PHYSICAL SETTING

The subject property is situated north of Michigan Avenue between Wesson and Campbell Streets in Detroit, Wayne County, Michigan (T2S/R11E). The subject property consists of twelve rectangular and/or irregularly-shaped parcels that contain approximately 2.06-acres. The subject properties are unimproved with the exception of a fire damaged residential dwelling and garage located at 4034-4038 Wesson Avenue. Public utilities (i.e. natural gas, electric, water, and sanitary sewer, etc.) have been disconnected from the subject property. The following table presents additional information regarding the subject property.

Address	Tax Identification Number	Owner of Record	Approximate Acreage
4007 Campbell Street	16014693	Washington Mutual Bank	0.09
3957 Campbell Street	16014694	Cardiff Properties LLC	0.09
3951 Campbell Street	16014695	Cardiff Properties LLC	0.06
5800 Michigan Avenue	16001706-8	Hani Y Gappy	0.83
5840 Michigan Avenue	16001705	Joey Gappy	0.13
5848 Michigan Avenue	16001704	Cardiff Properties LLC	0.16
5850 Michigan Avenue	16001703	Cardiff Properties LLC	0.15
5858 Michigan Avenue	16001702	Cardiff Properties LLC	0.14
5862-5864 Michigan Avenue	16001701	Cardiff Properties LLC	0.12
4028 Wesson Street	16015321	City Houses LLC	0.09
4034 Wesson Street	16015322	City Houses LLC	0.09
4040-4044 Wesson Street	16015323	City of Detroit – P&DD	0.19

Refer to Figure 1 for a topographic site location map. See Figure 2 for a site map with soil boring locations.

2.2 SUBJECT PROPERTY HISTORY AND LAND USE

According to AEMG's November 2010 Phase I ESA, the subject property has contained commercial development since at least 1884. The initial development included a hotel, horse shed, bowling alley, commercial building and summer garden. The property was further developed with a filling station and vulcanizing shop beginning in the early-1920s. Commercial and residential development continued throughout the 20th century included a greenhouse, photo shop, feed warehouse, a dry cleaner, stores, and parking lots. These structures were demolished over time and the property is currently vacant, with the exception of a fire-damaged house and garage on the northwestern portion of the property (4034 Wesson Street).

2.3 ADJACENT PROPERTY LAND USE

The following table describes the current uses of the adjoining properties, identified occupants, and noteworthy observations of environmental concern, if any, that were noted during AKT Peerless' recent reconnaissance of the adjoining properties.

Direction	Address	Current Use / Occupant	Potential Concerns
north	none identified	vacant land / none identified	none observed
	4019 Campbell Street	residential / residential tenants	none observed
east (from north to south)	none identified	vacant land / none identified	none observed
	3926-4000 Campbell Street	residential / residential tenants	none observed
	none identified	commercial parking lot / none identified	none observed
	none identified	vacant land / none identified	none observed
south (from east to west)	5715 Michigan Avenue	commercial / Social Security Administration	none observed
	5831 Michigan Avenue	commercial / Michigan Animal Hospital	none observed
	none identified	vacant land / none identified	none observed
	5845 Michigan Avenue	commercial / none identified	none observed
southeast	5902 Michigan Avenue	commercial / Jack's Beer & Wine	none observed
west (from north to south)	4046 Wesson Street	residential / residential tenant	none observed
	5900-5910 Michigan Avenue	residential apartment building / residential tenants	none observed

2.4 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Copies of environmental investigations performed at the subject property were provided to AKT Peerless by the Developer.

AEMG's November 2010 Phase I ESA

In November 2010 AEMG prepared a Phase I ESA for the subject property. The purpose of AEMG's Phase I ESA was to identify RECs associated with the subject property. According to the report, the following RECs associated with the subject property were identified:

1. Potential impact from former onsite operations- the property has been utilized for a former historical gasoline station (5830 Michigan Avenue), a "vulcanizing" building (adjoining north of 5836/40 Michigan), a photo shop (5848/50 Michigan), a cleaners (5862/64 Michigan), and automobile parking. It is assumed that chemicals and/or petroleum products were used at these locations, which may have caused historic spills/releases.
2. No records were available to confirm the removal of former onsite gasoline storage tanks from the former "filling station".
3. No records were available to determine whether heating oil storage tanks formerly were used onsite or remain underground.
4. Fire damaged the former residence and garage at 4034/38 Wesson Avenue, which may have introduced hazardous materials to the subsurface soils and groundwater from onsite

chemicals, oils, and materials that were damaged in the fire and also from fire-suppression chemicals.
5. Construction debris, which included concrete, bricks, asphalt, and wood, was observed on the subject property, as well as tires, plastic, metal debris, and small piles of soil that were approximately 2-3 feet in diameter.
6. Asbestos-containing materials and lead-based paints may be present in the building at 4034/38 Wesson Avenue due to the age of the onsite construction materials.
7. An unknown cylindrical structure (approximately 33 inches by 12.5 inches) was observed at 4028 Wesson Avenue, which may be associated with underground venting, although its purpose is unknown.
8. Surrounding properties are listed as potential sites of environmental concern in the surrounding area.

As a result of these RECs, AEMG recommended that additional investigation of these issues be conducted. A copy of AEMG's Phase I ESA report is provided in Appendix A.

3.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT ACTIVITIES

3.1 SCOPE OF ASSESSMENT

To further evaluate the RECs identified in Section 2.4.6, AKT Peerless conducted a subsurface investigation of the subject property that included: (1) a geophysical survey of a portion of the subject property, (2) the advancement of 12 soil borings, and (3) the collection of 22 soil samples. Samples were submitted for select laboratory analysis of volatile organic compounds (VOCs), Michigan 10 Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), polynuclear aromatic compounds (PNAs), and polychlorinated biphenyls (PCBs), diesel range organics (DRO), gasoline range organics (GRO), herbicides, and pesticides.

The following table summarizes each REC, the site investigation activities performed to address each REC, and the laboratory parameters used to address each REC.

Summary of AKT Peerless' Scope of Investigation

REC #	Environmental Concern	Investigation Activity	Analytical Parameters
REC 1 and 2	Former filling station with potential abandoned USTs	CO-SB-1 through CO-SB-4 geophysical survey	DRO, GRO, VOC, PNA, Pb, Cd, Cr,
REC 1	Former vulcanizing	CO-SB-5 and CO-SB-6	VOC, PNA, PCB, Michigan metals
REC 1	Former photo shop	CO-SB-7	VOC, PNA, Michigan metals
REC 1	Former greenhouse	CO-SB-8	VOC, PNA, herbicides, pesticides
REC 1	Former dry cleaners	CO-SB-9 through CO-SB-11	VOC
REC 3	Potential heating oil USTs	geophysical survey	N/A

REC #	Environmental Concern	Investigation Activity	Analytical Parameters
REC 8	Surrounding property uses	CO-SB-3, CO-SB-7 through CO-SB-11	VOC, PNA
N/A	Geophysical survey anomaly	CO-SB-12	VOC, PNA

The remaining RECs identified in the AEMG November 2010 Phase I ESA (fire damaged residence, construction debris, asbestos-containing materials, lead-based paint, and unknown cylindrical structure) will be property evaluated prior to demolition of these structures under a separate scope of services.

3.1.1 Geophysical Survey

On December 14, 2010, Geophysical Imaging, Inc. (GII) conducted a geophysical survey of a portion of the subject property using electromagnetic (EM) induction. Due to the presence of approximately six-inches of snow cover, a ground penetrating radar (GPR) survey could not be conducted. The purpose of the geophysical survey was to identify the presence of potential abandoned USTs at the subject property.

The EM survey was conducted utilizing a GSSI EMP-400, which is equipped with a multi-frequency profiler with integrated GPS. The EM equipment was calibrated prior to conducting the survey. Strong anomalies identified during the EM survey were likely associated with a former septic tank.

Refer to Appendix C for a copy of the geophysical survey report by GII.

3.1.2 Soil Evaluation

On December 17, 2010, AKT Peerless advanced 12 soil borings at the subject property. AKT Peerless used hydraulic drive/direct-push (Geoprobe®) sampling techniques and followed the drilling procedures outlined in ASTM publication D 6282-98 "*Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations.*" AKT Peerless collected continuous soil samples from the soil borings in four-foot intervals to the maximum depth explored of 20 feet below ground surface (bgs). AKT Peerless personnel inspected, field-screened, and logged the samples collected at each soil boring location. Refer to Figure 2 for a site map with soil boring locations. Boring logs are provided in Appendix B.

3.1.3 Groundwater Evaluation

AKT Peerless did not encounter groundwater during the subsurface investigation at the subject property.

3.1.4 Deviations from the Sampling and Analysis Plan

This Phase II ESA was conducted under a U.S. Environmental Protection Agency (EPA) Brownfield Assessment Grant awarded to DWCPA. On December 2, 2010, AKT Peerless prepared a Phase II SAP on behalf of DWCPA. On December 13, 2010 the SAP was approved

by the EPA Region 5 Project Manager. In completing field activities, the following deviations from the approved SAP were made:

- An additional soil boring (CO-SB-12) was advanced to investigate the anomaly detected during the geophysical survey.
- The locations of the proposed soil borings were adjusted based on a detailed review of Sanborn® Maps.

3.2 QUALITY ASSURANCE/QUALITY CONTROL

To ensure the accuracy of data collected during on site activities, AKT Peerless implemented proper quality assurance/quality control (QA/QC) measures. The QA/QC procedures included, but were not limited to, (1) decontamination of sampling equipment before and between sampling events, (2) calibration of field equipment, (3) documentation of field activities, and (4) sample preservation techniques.

3.2.1 Decontamination of Equipment

During sample collection, AKT Peerless adhered to proper decontamination procedures. Sampling equipment was decontaminated using the following methods to minimize potential cross-contamination of soil samples:

- Steam-cleaning or washing and scrubbing the equipment with non-phosphate detergent
- Rinsing the equipment
- Air-drying the equipment

3.2.2 Calibration of Field Equipment

All field instruments were calibrated prior to first use on-site to ensure accuracy. Field instruments utilized during investigation activities at this subject property were a photoionization detector (PID).

During AKT Peerless' Phase II ESA, a PID was used to screen all soil samples. The PID was maintained in a calibrated condition using 100 ppm isobutylene span gas prior to subsurface investigations.

3.2.3 Documentation of Activities

During AKT Peerless' Phase II ESA activities, subject property conditions (i.e. soil boring locations, weather conditions) were documented. AKT Peerless visually inspected the soil samples and prepared a geologic log for each soil boring. The logs include soil characteristics such as (1) color, (2) composition (e.g., sand, clay, or gravel), (3) soil moisture and water table depth, and (4) signs of possible contamination (i.e., stained or discolored soil, odors). Soil types were classified in accordance with ASTM publication D-2488 "*Unified Soil Classification System.*" All soil samples were delivered to a laboratory under chain-of-custody documentation. See Appendix B for AKT Peerless' soil boring logs. See Figure 2 for site map with soil boring locations.

3.2.4 Sample Preservation Techniques

AKT Peerless collected soil samples according to USEPA Publication SW-846, *"Test Methods for Evaluating Solid Waste."* Soil samples were collected in laboratory-supplied containers, stored on ice or at approximately 4 degrees Celsius, and submitted under chain-of-custody documentation.

Soil samples collected for volatile analyses were field preserved with methanol in accordance with U.S. EPA Method 5035. Soil samples collected for PNAs, PCBs, DRO, GRO< herbicide, pesticide, and metals analyses were stored in unpreserved, 4-ounce wide-mouth jars.

3.2.5 QA/QC Sample Collection

AKT Peerless collected QA/QC samples for soil and water matrices in accordance with the QA/QC sample procedures outlined in the *"Quality Assurance Project Plan (QAPP), Brownfield Assessment Program, Hazardous Substances and Petroleum Site Assessment Grant, Macomb County, Michigan"*, dated June 2009, revision 1. The following table describes the QA/QC samples collected for each matrix.

To audit sample accuracy and assess for contamination associated with field procedures and sampling handling, AKT Peerless collected QA/QC samples. The QA/QC samples are summarized below:

Summary of QA/QC Samples

QA/QC Sample	Laboratory Analytical Parameter(s)	Matrix	Number of Samples
Field Duplicate	VOC, PNA	Soil	1
Field Equipment Blank	VOCs, PNAs, GRO, DRO, Pb, Cd, Cr	Water	1
Matrix Spike/ Matrix Spike Duplicate	VOCs, PNAs	Soil	2
Trip Blank	VOCs	Water	1
Field Blank	VOCs, PNAs, GRO, DRO, Pb, Cd, Cr	Water	1

3.3 LABORATORY ANALYSES AND METHODS

AKT Peerless submitted 22 soil samples for laboratory analyses. The following table summarizes the location, depth, matrix, and laboratory analysis for each sample.

Summary of Laboratory Analyses

Sample Name/Depth (in feet)	Matrix	VOCs	PNAs	MI Metals	Pb, Cd, Cr	PCBs	DRO	GRO	Herbicides, Pesticides
CO-SB-1 (4-6)	S	☑	☑	-	☑	-	☑	☑	-
CO-SB-1 (10-12)	S	☑	☑	-	☑	-	-	-	-
CO-SB-2 (4-6)	S	☑	☑	-	☑	-	☑	☑	-

Sample Name/Depth (in feet)	Matrix	VOCs	PNAs	MI Metals	Pb, Cd, Cr	PCBs	DRO	GRO	Herbicides, Pesticides
CO-SB-2 (10-12)	S	☑	☑	-	☑	-	-	-	-
CO-SB-3 (1-3)	S	☑	☑	-	☑	-	-	-	-
CO-SB-3 (4-6)	S	☑	☑	-	☑	-	-	-	-
CO-SB-4 (2-4)	S	☑	☑	-	☑	-	-	-	-
CO-SB-5 (2-4)	S	☑	☑	☑	-	☑	-	-	-
CO-SB-5 (4-6)	S	☑	☑	-	-	-	-	-	-
CO-SB-6 (2-4)	S	☑	☑	-	-	-	-	-	-
CO-SB-6 (4-6)	S	☑	☑	-	-	-	-	-	-
CO-SB-7 (1-3)	S	☑	☑	☑	-	-	-	-	-
CO-SB-7 (4-6)	S	☑	☑	☑	-	-	-	-	-
CO-SB-8 (1-3)	S	☑	☑	-	-	-	-	-	☑
CO-SB-8 (4-6)	S	☑	☑	-	-	-	-	-	☑
CO-SB-9 (2-4)	S	☑	-	-	-	-	-	-	-
CO-SB-9 (13-15)	S	☑	-	-	-	-	-	-	-
CO-SB-10 (3-5)	S	☑	-	-	-	-	-	-	-
CO-SB-10 (12-14)	S	☑	-	-	-	-	-	-	-
CO-SB-11 (7-9)	S	☑	-	-	-	-	-	-	-
CO-SB-11 (13-15)	S	☑	-	-	-	-	-	-	-
CO-SB-12 (2-4)	S	☑	☑	-	-	-	-	-	-

Note: S = Soil sample

The laboratory analyzed the samples for: (1) VOCs in accordance with USEPA Method 8260B; (2) PNAs in accordance with USEPA Method 8270C; (3) metals in accordance with USEPA Method 6020, (4) mercury in accordance with USEPA Method 7471, (5) PCBs in accordance with USEPA Method 8082, (6) DRO and GRO in accordance with USEPA Method 8015, (7) herbicides in accordance with USEPA Method 8151, and (8) pesticides in accordance with USEPA Method 8081.

4.0 EVALUATION AND PRESENTATION OF RESULTS

4.1 SUBSURFACE CONDITIONS

4.1.1 Soil and Groundwater Conditions based on Published Material

According to the MDNR Geological Survey Division's *Bedrock Geology of Southern Michigan* (1987), bedrock beneath the subject property is classified as Dundee Limestone of Erian series within the Devonian System of the Paleozoic Era.

According to the MDNR Geological Survey Division's publication, *Quaternary Geology of Southern Michigan* (1982), soil in the area is lacustrine clay and silt. This soil is described as

gray to dark reddish brown and is varved in some localities. The soil chiefly underlies extensive, flat, low-lying areas formerly inundated by glacial Great Lakes. The soil thickness ranges from 10 to 30 feet. Typically, lacustrine clay and silt are associated with low hydraulic permeability and restrict the movement of groundwater.

According to the USDA's *Soil Survey of Wayne County, Michigan* (1977), the soil in the area is classified as the Pewamo-Blount-Metamora association. This soil is described as nearly level to gently sloping, poorly drained to somewhat poorly drained soil that has a fine-textured to moderately fine-textured subsoil.

4.1.2 Soil and Groundwater Conditions based on Field Observations

During drilling activities, AKT Peerless encountered the following soil types:

- FILL from below the topsoil to approximately two to five feet bgs. This fill consisted of light brown sand or clay with varying amounts of silt, gravel, and masonry debris.
- CLAY from two to five feet to 20 feet bgs, the maximum depth explored. This clay was medium-stiff to stiff, dark brown and grey to grey with silt and gravel.

AKT Peerless did not encounter groundwater during the subsurface investigation at the subject property.

Except for the fill material, the subsurface soils at the property were consistent with the description of lacustrine clay and silt as described in the *Quaternary Geology of Southern Michigan.* See Figure 2 for a site map with soil boring locations. See Appendix B for AKT Peerless' soil boring logs.

4.2 MDNRE RELEVANT EXPOSURE PATHWAYS AND APPLICABLE CRITERIA

4.2.1 Relevant Exposure Pathways

As defined in Michigan Public Act 451 Part 201, "relevant pathway" means an exposure pathway that is reasonable and relevant because there is a reasonable potential for exposure to a hazardous substance. The analysis of potential exposure pathways is based on known existing conditions at the subject property. The following subsections identify the relevant exposure pathways based on the subject property conditions observed.

4.2.1.1 Ingestion of Groundwater Pathway

Groundwater was not encountered in any of the soil borings drilled at the subject property. Soil borings were drilled to a maximum depth of 20 feet bgs, the maximum depth explored. AKT Peerless encountered a confining layer consisting of clay from varying depths between two to five feet and to 20 feet bgs.

In addition, the City of Detroit prohibits well installation and provides municipal drinking water service. Therefore, ingestion of groundwater at the subject property is not a relevant exposure pathway.

4.2.1.2 Groundwater Venting to Surface Water Pathway

Groundwater Venting to Surface Water is not a human exposure pathway, but rather an exposure pathway based on aquatic toxicity. The subject property is not located adjacent to any lakes or rivers. Furthermore, the subject property is located in an area of Detroit with a combined sanitary and storm water sewer system. Therefore, groundwater venting to surface water is not a relevant exposure pathway.

4.2.1.3 Groundwater Contact Pathway

Groundwater contact pathway is a relevant pathway.

4.2.1.4 Volatilization to Indoor Air Inhalation Pathway

Volatilization to Indoor Air Inhalation is a relevant exposure pathway.

4.2.1.5 Volatilization to Ambient Air Pathway

Volatilization to Ambient Air is a relevant exposure pathway.

4.2.1.6 Particulate Inhalation Pathway

Particulate Inhalation is a relevant exposure pathway.

4.2.1.7 Direct Contact Pathway

Direct Contact is a relevant exposure pathway.

4.2.2 Applicable Criteria

Applicable criterion means a cleanup criterion for a relevant pathway. A criterion is not applicable if the exposure pathway is not relevant. Based on the exposure pathway evaluation, the applicable pathways at the subject property include:

- Groundwater Contact Protection Criteria (GCP);
- Soil Volatilization to Indoor Air Inhalation (SVIAI)/Groundwater Volatilization to Indoor Air Inhalation (GVIAI);
- Infinite Source Volatile Soil Inhalation (VSIC);
- Particulate Soil Inhalation (PSI), and;
- Soil Direct Contact (DC)/Groundwater Contact (GC);
- Soil Saturation Concentration Screening Levels (CSAT);

AKT Peerless compared the laboratory analytical data to the applicable Part 201 Generic Residential Cleanup Criteria (GRCC) as published by the MDNRE-RD.

4.3 LABORATORY ANALYTICAL RESULTS

AKT Peerless collected soil and groundwater samples for the purpose of determining if the subject property meets the definition of a *facility.* Analytical results were compared with MDNRE Residential and Commercial I Generic Cleanup Criteria provided in MDNRE Remediation Division's Operational Memorandum No. 1, Tables 1 and 2.

4.3.1 Soil Analytical Results

AKT Peerless submitted 22 soil samples for select laboratory analysis of VOCs, PNAs, Michigan 10 Metals, PCBs, DRO, GRO, herbicides, and pesticides. The results of the laboratory analyses of the soil samples with exceedances above MDNRE GRCC are summarized in the table below:

Summary of Soil Analytical Results

Soil Boring Location & Depth	Parameter	MDNRE Criteria Exceeded						
		DWP	GSIP	GCP	SVIAI	VSI	PSI	DC
CO-SB-8 (1-3)	tetrachloroethylene	☑	☑	-	-	-	-	-
CO-SB-8 (4-6)	tetrachloroethylene	☑	-	-	-	-	-	-
CO-SB-8 (4-6) Dup	tetrachloroethylene	☑	-	-	-	-	-	-
CO-SB-9 (2-4)	tetrachloroethylene	☑	-	-	-	-	-	-
CO-SB-10 (3-5)	tetrachloroethylene	☑	-	-	-	-	-	-
CO-SB-11 (7-9)	naphthalene	-	☑	-	-	-	-	-
CO-SB-12 (2-4)	benzo(a)pyrene	-	-	-	-	-	-	☑
	fluoranthene	-	☑	-	-	-	-	-
	phenanthrene	-	☑	-	-	-	-	-

*- Sample identification: SB-# indicates soil boring and (#-#) indicates sample depth in feet.

No other target parameters were detected at concentrations above laboratory method detection limits or applicable MDNRE Criteria.

Refer to Figure 3 for a site map with soil analytical results exceeding applicable MDNRE criteria. Refer to Table 1 for a summary of soil analytical results. Refer to Appendix D for a complete analytical laboratory report.

4.3.2 Groundwater Analytical Results

AKT Peerless did not encounter groundwater during the subsurface investigation at the subject property.

4.3.3 Quality Assurance/Quality Control Analytical Results

4.3.3.1 Soil

QA/QC samples were collected as outlined in Section 3.2.5 of this report and in accordance with the QA/QC sample procedures outlined in the *"QAPP, Brownfield Assessment Program, Hazardous Substances and Petroleum Site Assessment Grant, Detroit / Wayne County Port*

Authority Brownfield Redevelopment Authority," dated June 2009 Revision 1. Samples were analyzed within hold times and in accordance with specified methods for each analytical group. Laboratory analytical results for samples analyzed met QA/QC data quality objectives as outlined in the QAPP and the site-specific Phase II SAP.

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 SUMMARY OF ENVIRONMENTAL CONCERNS

Based on AEMG's November 2010 Phase I ESA, the following environmental concerns were identified:

- Previous uses of the subject property as a filling station, vulcanizing operation, photo shop, greenhouse, and dry cleaner.
- Potential gasoline USTs on the subject property
- Potential heating oil USTs on the subject property
- Fire damaged residence on the subject property
- Construction debris on the subject property
- Unknown cylindrical structure on the subject property
- Surrounding property uses

5.2 SUMMARY OF SUBSURFACE INVESTIGATION

On December 17, 2010, AKT Peerless conducted a subsurface investigation of the subject property that included: (1) a geophysical survey of a portion of the subject property, (2) the advancement of 12 soil borings, and (3) the collection of 22 soil samples. Samples were submitted for select laboratory analysis of VOCs, Michigan 10 Metals, PNAs, PCBs, DRO, GRO, herbicides, and pesticides.

5.3 CONCLUSIONS

AKT Peerless conducted soil sampling in areas most likely to be impacted by contaminants based on the past use of the subject property. The results of the investigation indicate the following:

- A geophysical survey conducted on a portion of the subject property identified an anomaly that may be a potential former septic tank.
- Benzo(a)pyrene was detected in soil in SB-12 (2-4) at concentrations exceeding the MDNRE Part 201 Generic Residential/Commercial I DC Criteria.
- Laboratory analytical results for GRO and DRO indicated that these contaminants were detected in CO-SB-1 (4-6) and CO-SB-2 (4-6) at concentrations below MDNRE Draft Criteria.

- Remaining target parameters were not detected in soil samples above the applicable MDNRE GRCC.

Based on laboratory analytical results, the subject property meets the definition of a *facility*[1], as defined in Part 201 of the NREPA, Michigan Public Act (PA) 451, 1994, as amended.

5.4 RECOMMENDATIONS

Based on the presence of facility level contamination on the subject property, AKT Peerless recommends any future owner(s)/operator(s) prepare a Baseline Environmental Assessment (BEA) report. Section 26(1)(c) of Part 201 provides certain liability protections to a person who becomes an owner or operator of a *facility* on, or after June 5, 1995 if they comply with both of the following, or unless other defenses apply: a BEA is conducted prior to or within 45 days after the earlier of the date of purchase, occupancy, or foreclosure, and the owner or operator discloses the results of the BEA to the MDNRE and subsequent purchaser or transferee within 6 months.

In addition, because the subject property meets the definition of a facility, AKT Peerless recommends conducting a Section 20107(a) Compliance Analysis to assure compliance with Due Care obligations. Due Care obligations include:

- Undertaking measures to prevent exacerbation of existing contamination.
- Exercising due care by undertaking response activities to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the subject property in a manner that protects health and safety.
- Taking reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions.
- Provide notifications to the MDNRE and others in regard to mitigating fire and explosions hazards, discarded or abandoned containers, contamination migrating beyond property boundaries, as applicable.

A future owner/operator may be required to conduct additional subsurface investigation to further evaluate for exposure pathways and screening levels at the subject property (i.e. drinking water, direct contact, indoor air inhalation, soil saturation) in connection with known contamination to comply with due care obligations.

[1] "Facility" means any area, place, or property where a hazardous substance in excess of the concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located. Facility does not include any area, place, or property where any of the following conditions are satisfied: (*i*) Response activities have been completed under this part that satisfy the cleanup criteria for unrestricted residential use. (*ii*) Corrective action has been completed under Part 213 that satisfies the cleanup criteria for unrestricted residential use. (*iii*) Site-specific criteria that have been approved by the department for application at the area, place, or property are met or satisfied and both of the following conditions are met: (A) The site-specific criteria do not depend on any land use or resource use restriction to ensure protection of the public health, safety, or welfare or the environment. (B) Hazardous substances at the area, place, or property that are not addressed by site-specific criteria satisfy the cleanup criteria for unrestricted residential use.

In addition, AKT Peerless recommends additional investigation to evaluate the detected anomaly to determine whether a UST or septic tank is present at this location. If it is determined that a UST or septic tank exists in this location, AKT Peerless recommends that it be decommissioned, removed, and/or disposed in accordance with applicable federal, state, and local regulations. Additional action beyond that recommended above may be warranted if evidence of an actual UST is identified at the subject property.

6.0 LIMITATIONS

The information and opinions contained in this report are for the exclusive use of Children's Outreach and DWCPA. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without your written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), expressly agrees to be bound by the original terms and conditions entered into by AKT Peerless, Children's Outreach, and DWCPA.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by Children's Outreach, DWCPA or third parties is complete or accurate.

7.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

The following individuals contributed to the completion of this investigation.

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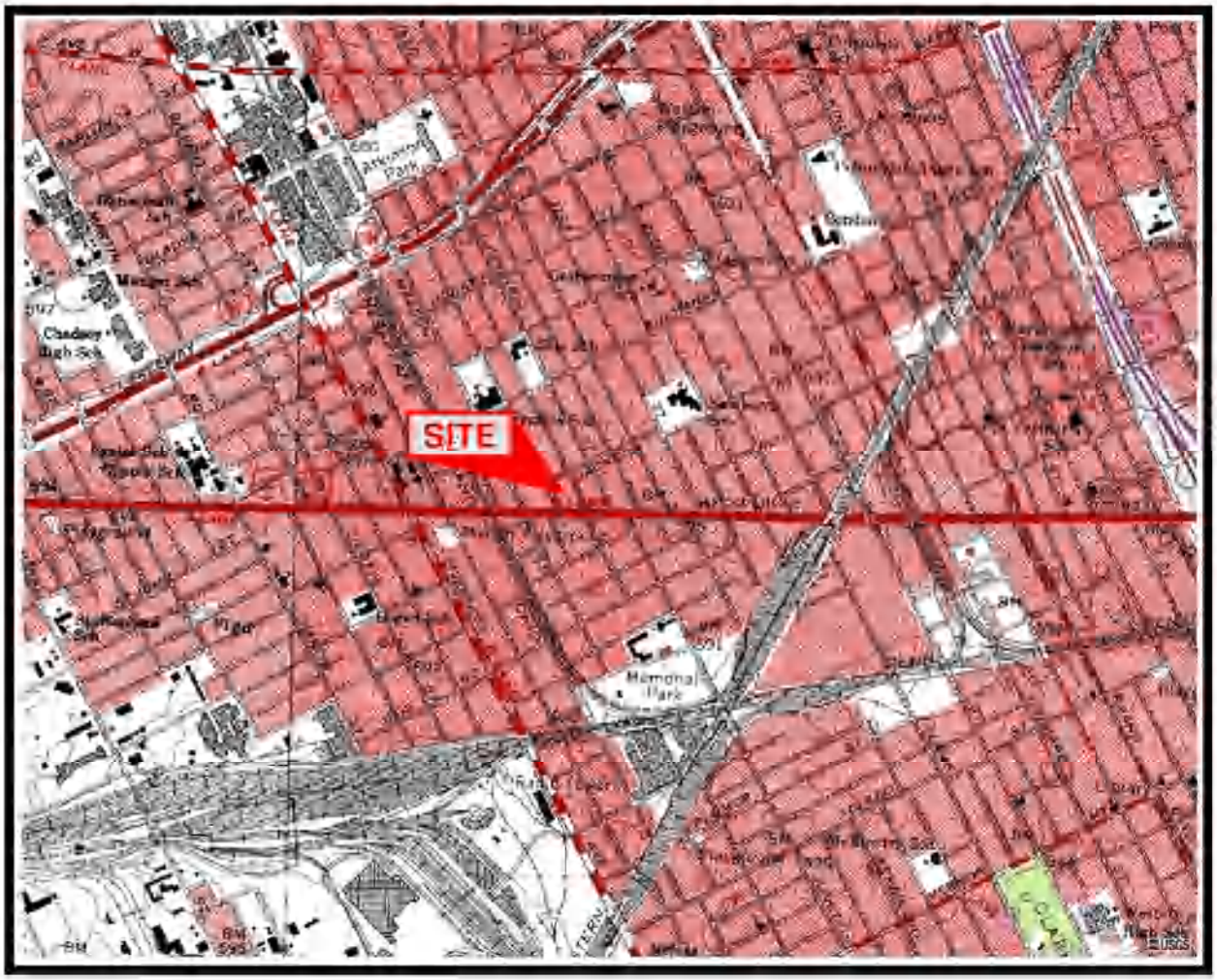
AKT PEERLESS ENVIRONMENTAL & ENERGY SERVICES

DETROIT QUADRANGLE

MICHIGAN - WAYNE COUNTY

7.5 MINUTE SERIES (TOPOGRAPHIC)



T.1 S. - R.9 E.

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
DATUM IS MEAN SEA LEVEL

MICHIGAN
QUADRANGLE LOCATION

IMAGE TAKEN FROM 1967 U.S.G.S. TOPOGRAPHIC MAP
PHOTOREVISED 1973

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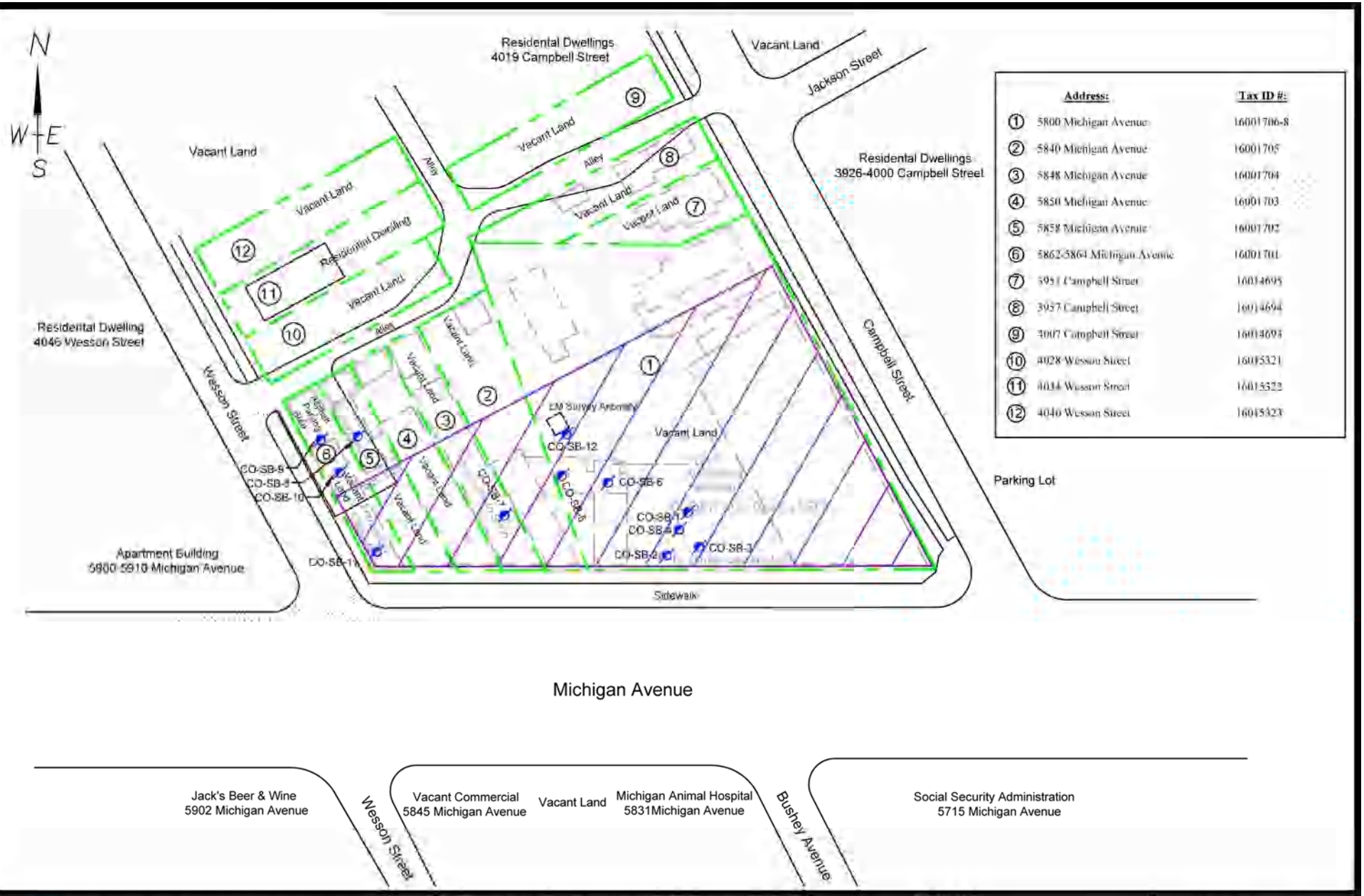
TOPOGRAPHIC LOCATION MAP

CHILDREN'S OUTREACH
5800 MICHIGAN AVENUE
DETROIT, MICHIGAN
PROJECT NUMBER - 6861F-1-20

DRAWN BY: JWB
DATE: 12/21/2010

FIGURE 1



Michigan Avenue

Jack's Beer & Wine
5902 Michigan Avenue

Wesson Street

Vacant Commercial
5845 Michigan Avenue

Vacant Land

Michigan Animal Hospital
5831Michigan Avenue

Bushey Avenue

Social Security Administration
5715 Michigan Avenue

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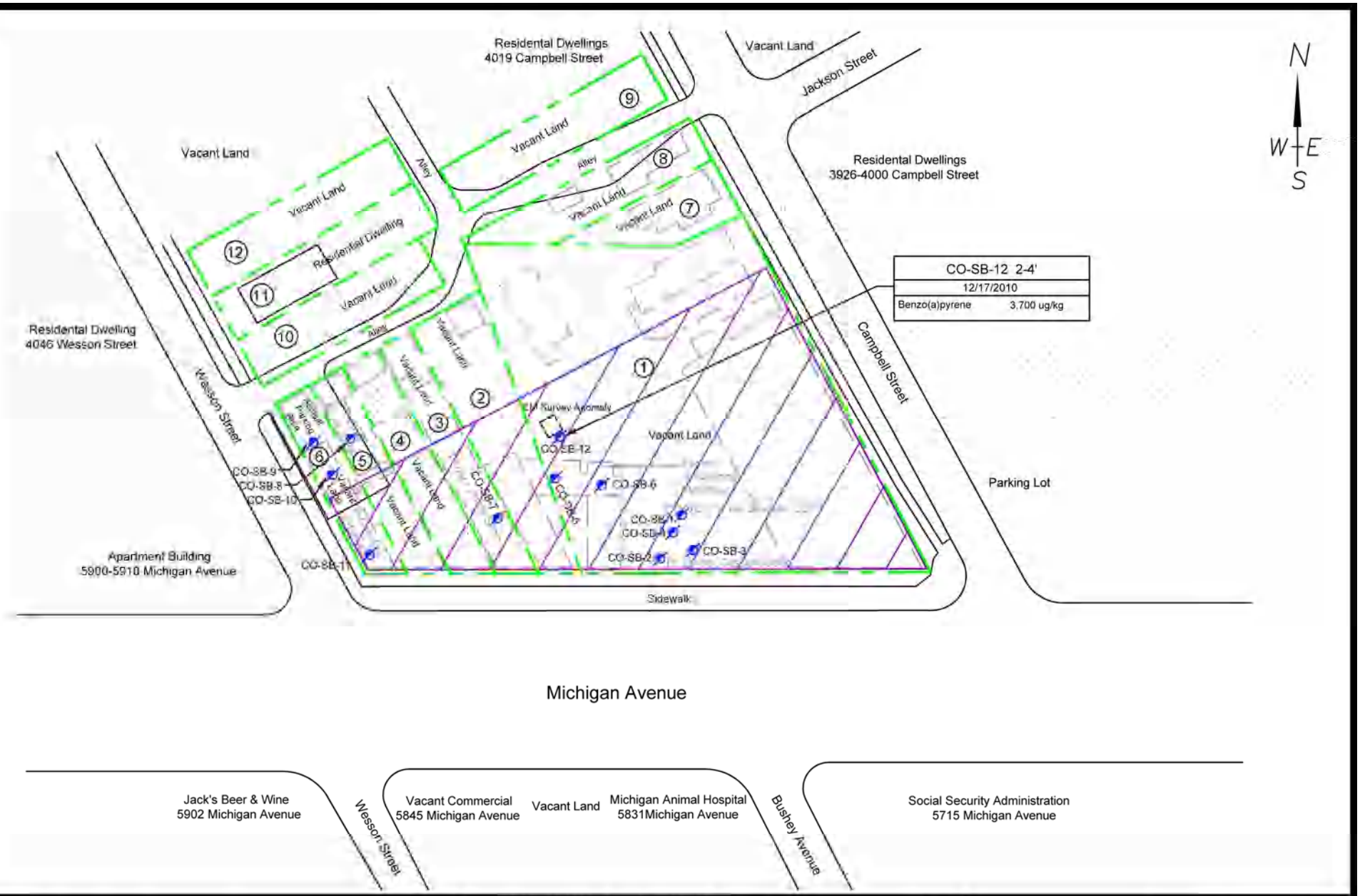
SITE MAP WITH SOIL BORING LOCATIONS
CHILDREN'S OUTREACH
5800 MICHIGAN AVENUE
DETROIT, MICHIGAN
PROJECT NUMBER: 6861F-1-20

LEGEND
= PROPERTY LINE
= PARCEL LINE
= SOIL BORING
= GEOPHYSICAL SURVEY AREA
= FORMER STRUCTURE

DRAWN BY: JWB
DATE: 1/6/2011

0 40 80
SCALE: 1" = 80'±0

FIGURE 2



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SITE MAP WITH SOIL RESULTS EXCEEDING MDNRE GRCC
CHILDREN'S OUTREACH
5800 MICHIGAN AVENUE
DETROIT, MICHIGAN
PROJECT NUMBER 6861E-1-20

LEGEND
= PROPERTY LINE
= PARCEL LINE
= SOIL BORING
= GEOPHYSICAL SURVEY AREA
= FORMER STRUCTURE

DRAWN BY: JWB
DATE: 1/11/2011
0 40 80
SCALE: 1" = 80' ±0

FIGURE 3

AKTPEERLESS environmental services

Table 1
Summary of Soil Analytical Results
Children's Outreach
5800-5864 Michigan Avenue, 4028-4044 Wesson Avenue, and 3951-4007 Campbell Avenue
Detroit, Michigan
AKT Peerless Project No. 6861F-1-20

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#18	#19	#20							
Parameters* *(Refer to detailed laboratory report for method reference data)*	**Chemical Abstract Service Number**	**Statewide Default Background Levels**	**Residential and Commercial I Drinking Water Protection Criteria and RBSLs**	**Groundwater Surface Water Interface Protection Criteria and RBSLs**	**Groundwater Contact Protection Criteria and RBSLs**	**Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs**	**Infinite Source Volatile Soil Inhalation Criteria (VSIC) and RBSLs**	**Particulate Soil Inhalation Criteria and RBSLs**	**Direct Contact Criteria and RBSLs**	**Soil Saturation Concentration Screening Levels**	Sample Location	CO-SB-1	CO-SB-1	CO-SB-2	CO-SB-2	CO-SB-3	CO-SB-3	CO-SB-4
											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	4-6	10-12	4-6	10-12	1-3	4-6	2-4
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Metals																		
Cadmium (B)	7440-43-9	1,200	6,000	(G,X)	2.3E+8	NLV	NLV	1.7E+6	5.5E+5	NA		210	<200	<200	<200	340	<200	420
Chromium, Total	7440-47-3	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	2.6E+5	2.5E+6	NA		2,310	3,260	3,030	3,860	3,450	2,730	3,570
Lead (B)	7439-92-1	21,000	7.0E+5	(G,X)	ID	NLV	NLV	1.0E+8	4.0E+5	NA		12,900	4,850	8,750	5,430	27,400	6,280	12,100
Semivolatiles, PNAs																		
Acenaphthene	83-32-9	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	1.4E+10	4.1E+7	NA		<300	<300	<300	<300	<300	<300	<300
Acenaphthylene	208-96-8	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.3E+9	1.6E+6	NA		<300	<300	<300	<300	<300	<300	<300
Anthracene	120-12-7	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	6.7E+10	2.3E+8	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLL	NLV	NLV	1.5E+6	2,000	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	NLL	ID	ID	ID	20,000	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLL	NLV	NLV	8.0E+8	2.5E+6	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLL	NLV	NLV	ID	2.0E+5	NA		<300	<300	<300	<300	<300	<300	<300
Chrysene (Q)	218-01-9	NA	NLL	NLL	NLL	ID	ID	ID	2.0E+6	NA		<300	<300	<300	<300	<300	<300	<300
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLL	NLV	NLV	ID	2,000	NA		<300	<300	<300	<300	<300	<300	<300
Fluoranthene	206-44-0	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	9.3E+9	4.6E+7	NA		<300	<300	<300	<300	500	<300	<300
Fluorene	86-73-7	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	9.3E+9	2.7E+7	NA		<300	<300	<300	<300	<300	<300	<300
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		<300	<300	<300	<300	<300	<300	<300
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		<300	<300	<300	<300	<300	<300	<300
Naphthalene	91-20-3	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		<300	<300	<300	<300	<300	<300	<300
Phenanthrene	85-01-8	NA	56,000	5,300	1.1E+6	2.8E+6	1.6E+5	6.7E+6	1.6E+6	NA		<300	<300	<300	<300	<300	<300	<300
Pyrene	129-00-0	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.7E+9	2.9E+7	NA		<300	<300	<300	<300	400	<300	<300
Volatiles																		
Acrylonitrile (I)	107-13-1	NA	100 (M); 52	100 (M,X); 98	2.8E+5	6,600	5,000	4.6E+7	16,000	8.3E+6		<200	<200	<200	<200	<200	<200	<100
Bromomethane	74-83-9	NA	200	700	1.4E+6	860	11,000	3.3E+8	3.2E+5	2.2E+6		<300	<300	<300	<300	<400	<300	<300
sec-Butylbenzene	135-98-8	NA	1,600	ID	88,000	ID	ID	ID	2.5E+6	1.0E+7		110	<90	<80	<90	<90	<80	<70
1,3-Dichlorobenzene	541-73-1	NA	170	1,100	51,000	ID	ID	ID	1.7E+5 (C)	1.7E+5		<200	<200	<200	<200	<200	<200	<100
Ethylene dibromide	106-93-4	NA	20 (M); 1.0	20 (M); 4.0	500	670	1,700	1.4E+7	92	8.9E+5		<30	<30	<30	<30	<40	<30	<30
Methylene chloride	75-09-2	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	6.6E+9	1.3E+6	2.3E+6		<200	<200	<200	<200	<200	<200	<100
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	3.9E+11	2.9E+6	1.2E+8		<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<1,000
1,1,2-Trichloroethane	79-00-5	NA	100	6,600 (X)	4.2E+5	4,600	17,000	1.9E+8	1.8E+5	9.2E+5		<600	<90	<220	<90	<90	<80	<70
Vinyl chloride	75-01-4	NA	40	300	20,000	270	4,200	3.5E+8	3,800	4.9E+5		<80	<90	<80	<90	<90	<80	<70
Xylenes (I)	1330-20-7	NA	5,600	700	1.5E+5 (C)	1.5E+5 (C)	4.6E+7	2.9E+11	1.5E+5 (C)	1.5E+5		<280	<290	<280	<290	<290	<280	<170
Remaining VOCs	varies	NA	-	-	-	-	-	-	-	-		BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Petroleum Hydrocarbons																		
TPH GRO (C6-C10)		NA	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05		34,000	NS	25,000	NS	NS	NS	NS
TPH DRO (C10-C28)		NA	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06		6.1E+05	NS	9,000	NS	NS	NS	NS

AKTPEERLESS environmental services

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Detroit, Michigan
AKT Peerless Project No. 6861F-1-20

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#18	#19	#20								
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											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	2-4	4-6	2-4	4-6	1-3	4-6	1-3
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Metals																		
Arsenic	7440-38-2	5,800	4,600	70,000 (X)	2.0E+6	NLV	NLV	7.2E+5	7,600	NA		1,240	NS	NS	NS	2,480	3,060	NS
Barium (B)	7440-39-3	75,000	1.3E+6	(G,X)	1.0E+9 (D)	NLV	NLV	3.3E+8	3.7E+7	NA		53,800	NS	NS	NS	52,500	50,200	NS
Cadmium (B)	7440-43-9	1,200	6,000	(G,X)	2.3E+8	NLV	NLV	1.7E+6	5.5E+5	NA		210	NS	NS	NS	320	330	NS
Chromium, Total	7440-47-3	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	2.6E+5	2.5E+6	NA		2,790	NS	NS	NS	4,390	17,800	NS
Copper (B)	7440-50-8	32,000	5.8E+6	(G)	1.0E+9 (D)	NLV	NLV	1.3E+8	2.0E+7	NA		8,100	NS	NS	NS	18,500	15,400	NS
Lead (B)	7439-92-1	21,000	7.0E+5	(G,X)	ID	NLV	NLV	1.0E+8	4.0E+5	NA		15,900	NS	NS	NS	71,700	46,200	NS
Mercury, Total	7439-97-6	130	1,700	50 (M); 1.2	47,000	48,000	52,000	2.0E+7	1.6E+5	NA		<50	NS	NS	NS	210	<50	NS
Selenium (B)	7782-49-2	410	4,000	400	7.8E+7	NLV	NLV	1.3E+8	2.6E+6	NA		<500	NS	NS	NS	<500	<500	NS
Silver (B)	7440-22-4	1,000	4,500	100 (M); 27	2.0E+8	NLV	NLV	6.7E+6	2.5E+6	NA		<200	NS	NS	NS	<200	<200	NS
Zinc (B)	7440-66-6	47,000	2.4E+6	(G)	1.0E+9 (D)	NLV	NLV	ID	1.7E+8	NA		24,100	NS	NS	NS	61,000	55,000	NS
Pesticides																		
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	2.4E+6	NLV	NLV	6.7E+9	2.5E+6	NA		NS	NS	NS	NS	NS	NS	<240
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	3.1E+6	NLV	NLV	ID	1.7E+6	NA		NS	NS	NS	NS	NS	NS	<240
Pesticides, Chlorinated																		
Aldrin	309-00-2	NA	NLL	NLL	NLL	1.3E+6	58,000	6.4E+5	1,000	NA		NS	NS	NS	NS	NS	NS	<20
Chlordane (J)	57-74-9	NA	NLL	NLL	NLL	1.1E+7	1.2E+6	3.1E+7	31,000	NA		NS	NS	NS	NS	NS	NS	<20
4-4'-DDD	72-54-8	NA	NLL	NLL	NLL	NLV	NLV	4.4E+7	95,000	NA		NS	NS	NS	NS	NS	NS	<20
4-4'-DDE	72-55-9	NA	NLL	NLL	NLL	NLV	NLV	3.2E+7	45,000	NA		NS	NS	NS	NS	NS	NS	<20
4-4'-DDT	50-29-3	NA	NLL	NLL	NLL	NLV	NLV	3.2E+7	57,000	NA		NS	NS	NS	NS	NS	NS	<20
Dieldrin	60-57-1	NA	NLL	NLL	NLL	1.4E+5	19,000	6.8E+5	1,100	NA		NS	NS	NS	NS	NS	NS	<20
Endrin	72-20-8	NA	NLL	NLL	NLL	NLV	NLV	ID	65,000	NA		NS	NS	NS	NS	NS	NS	<20
Heptachlor	76-44-8	NA	NLL	NLL	NLL	3.5E+5	62,000	2.4E+6	5,600	NA		NS	NS	NS	NS	NS	NS	<20
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLL	NLV	NLV	1.2E+6	3,100	NA		NS	NS	NS	NS	NS	NS	<20
alpha-Hexachlorocyclohexane	319-84-6	NA	18	NA	2,500	30,000	12,000	1.7E+6	2,600	NA		NS	NS	NS	NS	NS	NS	<20
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	5,100	NLV	NLV	5.9E+6	5,400	NA		NS	NS	NS	NS	NS	NS	<20
Lindane	58-89-9	NA	20 (M); 7.0	20 (M); 0.99	7,100	ID	ID	ID	8,300	NA		NS	NS	NS	NS	NS	NS	<20
Methoxychlor	72-43-5	NA	16,000	NA	18,000	ID	ID	ID	1.9E+6	NA		NS	NS	NS	NS	NS	NS	<50

AKT PEERLESS environmental services

Table 1
Summary of Soil Analytical Results
Children's Outreach
5800-5864 Michigan Avenue, 4028-4044 Wesson Avenue, and 3951-4007 Campbell Avenue
Detroit, Michigan
AKT Peerless Project No. 6861F-1-20

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#18	#19	#20								
Parameters* *(Refer to detailed laboratory report for method reference data)*	**Chemical Abstract Service Number**	**Statewide Default Background Levels**	**Residential and Commercial I Drinking Water Protection Criteria and RBSLs**	**Groundwater Surface Water Interface Protection Criteria and RBSLs**	**Groundwater Contact Protection Criteria and RBSLs**	**Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs**	**Infinite Source Volatile Soil Inhalation Criteria (VSIC) and RBSLs**	**Particulate Soil Inhalation Criteria and RBSLs**	**Direct Contact Criteria and RBSLs**	**Soil Saturation Concentration Screening Levels**	Sample Location	CO-SB-5	CO-SB-5	CO-SB-6	CO-SB-6	CO-SB-7	CO-SB-7	CO-SB-8
											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	2-4	4-6	2-4	4-6	1-3	4-6	1-3
Semivolatiles, PNAs																		
Acenaphthene	83-32-9	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	1.4E+10	4.1E+7	NA		<300	<300	<300	<300	<300	<300	<300
Acenaphthylene	208-96-8	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.3E+9	1.6E+6	NA		<300	<300	<300	<300	<300	<300	<300
Anthracene	120-12-7	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	6.7E+10	2.3E+8	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		<300	<300	800	<300	400	500	400
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLL	NLV	NLV	1.5E+6	2,000	NA		<300	<300	800	<300	300	400	500
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	NLL	ID	ID	ID	20,000	NA		<300	<300	600	<300	<300	400	400
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLL	NLV	NLV	8.0E+8	2.5E+6	NA		<300	<300	<300	<300	<300	<300	500
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLL	NLV	NLV	ID	2.0E+5	NA		<300	<300	800	<300	300	300	400
Chrysene (Q)	218-01-9	NA	NLL	NLL	NLL	ID	ID	ID	2.0E+6	NA		<300	<300	900	<300	400	500	600
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLL	NLV	NLV	ID	2,000	NA		<300	<300	<300	<300	<300	<300	<300
Fluoranthene	206-44-0	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	9.3E+9	4.6E+7	NA		<300	<300	1,500	<300	600	1,000	700
Fluorene	86-73-7	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	9.3E+9	2.7E+7	NA		<300	<300	<300	<300	<300	<300	<300
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		<300	<300	<300	<300	<300	<300	400
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		<300	<300	<300	<300	<300	<300	<300
Naphthalene	91-20-3	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		<300	<300	<300	<300	<300	<300	<300
Phenanthrene	85-01-8	NA	56,000	5,300	1.1E+6	2.8E+6	1.6E+5	6.7E+6	1.6E+6	NA		<300	<300	800	<300	<300	600	500
Volatiles																		
Acrylonitrile (I)	107-13-1	NA	100 (M); 52	100 (M,X); 98	2.8E+5	6,600	5,000	4.6E+7	16,000	8.3E+6		<100	<200	<100	<200	<200	<100	<300
1,3-Dichlorobenzene	541-73-1	NA	170	1,100	51,000	ID	ID	ID	1.7E+5 (C)	1.7E+5		<100	<200	<100	<200	<200	<100	<300
1,2-Dichloroethane (I)	107-06-2	NA	100	7,200 (X)	3.8E+5	2,100	6,200	1.2E+8	91,000	1.2E+6		<70	<90	<60	<80	<80	<60	<200
1,1-Dichloroethylene (I)	75-35-4	NA	140	1,300 (X)	2.2E+5	62	1,100	6.2E+7	2.0E+5	5.7E+5		<70	<90	<60	<80	<80	<60	<200
Methylene chloride	75-09-2	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	6.6E+9	1.3E+6	2.3E+6		<100	<200	<100	<200	<200	<100	<300
1,1,2,2-Tetrachloroethane	79-34-5	NA	170	1,600 (X)	94,000	4,300	10,000	5.4E+7	53,000	8.7E+5		<70	<90	<60	<80	<80	<60	<200
Tetrachloroethylene	127-18-4	NA	**100**	**900 (X)**	88,000 (C)	11,000	1.8E+5	5.4E+9	88,000 (C)	88,000		<70	<90	<60	<80	<80	<60	**1,600**
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	3.9E+11	2.9E+6	1.2E+8		<1,000	<2,000	<1,000	<2,000	<2,000	<1,000	<3,000
Trichloroethylene	79-01-6	NA	100	4,000 (X)	4.4E+5	7,100	78,000	1.8E+9	5.0E+5 (C,DD)	5.0E+5		<70	<90	<60	<80	<80	<60	<200
Vinyl chloride	75-01-4	NA	40	300	20,000	270	4,200	3.5E+8	3,800	4.9E+5		<70	<90	<60	<80	<80	<60	<200
Remaining VOCs	varies	NA	-	-	-	-	-	-	-	-		BDL	BDL	BDL	BDL	BDL	BDL	BDL

AKTPEERLESS environmental services

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5800-5864 Michigan Avenue, 4028-4044 Wesson Avenue, and 3951-4007 Campbell Avenue
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Guidesheet Number →		#10	#11	#12	#13	#14	#15	#18	#19	#20								
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											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	4-6	4-6	2-4	13-15	3-5	12-14	7-9
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Pesticides																		
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	2.4E+6	NLV	NLV	6.7E+9	2.5E+6	NA		<240	NS	NS	NS	NS	NS	NS
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	3.1E+6	NLV	NLV	ID	1.7E+6	NA		<240	NS	NS	NS	NS	NS	NS
Pesticides, Chlorinated																		
Aldrin	309-00-2	NA	NLL	NLL	NLL	1.3E+6	58,000	6.4E+5	1,000	NA		<20	NS	NS	NS	NS	NS	NS
Chlordane (J)	57-74-9	NA	NLL	NLL	NLL	1.1E+7	1.2E+6	3.1E+7	31,000	NA		<20	NS	NS	NS	NS	NS	NS
4-4'-DDD	72-54-8	NA	NLL	NLL	NLL	NLV	NLV	4.4E+7	95,000	NA		<20	NS	NS	NS	NS	NS	NS
4-4'-DDE	72-55-9	NA	NLL	NLL	NLL	NLV	NLV	3.2E+7	45,000	NA		<20	NS	NS	NS	NS	NS	NS
4-4'-DDT	50-29-3	NA	NLL	NLL	NLL	NLV	NLV	3.2E+7	57,000	NA		<20	NS	NS	NS	NS	NS	NS
Dieldrin	60-57-1	NA	NLL	NLL	NLL	1.4E+5	19,000	6.8E+5	1,100	NA		<20	NS	NS	NS	NS	NS	NS
Endrin	72-20-8	NA	NLL	NLL	NLL	NLV	NLV	ID	65,000	NA		<20	NS	NS	NS	NS	NS	NS
Heptachlor	76-44-8	NA	NLL	NLL	NLL	3.5E+5	62,000	2.4E+6	5,600	NA		<20	NS	NS	NS	NS	NS	NS
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLL	NLV	NLV	1.2E+6	3,100	NA		<20	NS	NS	NS	NS	NS	NS
alpha-Hexachlorocyclohexane	319-84-6	NA	18	NA	2,500	30,000	12,000	1.7E+6	2,600	NA		<20	NS	NS	NS	NS	NS	NS
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	5,100	NLV	NLV	5.9E+6	5,400	NA		<20	NS	NS	NS	NS	NS	NS
Lindane	58-89-9	NA	20 (M); 7.0	20 (M); 0.99	7,100	ID	ID	ID	8,300	NA		<20	NS	NS	NS	NS	NS	NS
Methoxychlor	72-43-5	NA	16,000	NA	18,000	ID	ID	ID	1.9E+6	NA		<50	NS	NS	NS	NS	NS	NS
Semivolatiles, PNAs																		
Acenaphthene	83-32-9	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	1.4E+10	4.1E+7	NA		<300	<300	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.3E+9	1.6E+6	NA		<300	<300	NS	NS	NS	NS	NS
Anthracene	120-12-7	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	6.7E+10	2.3E+8	NA		400	<300	NS	NS	NS	NS	NS
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		1,000	400	NS	NS	NS	NS	NS
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLL	NLV	NLV	1.5E+6	2,000	NA		1,100	400	NS	NS	NS	NS	NS
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	NLL	ID	ID	ID	20,000	NA		900	400	NS	NS	NS	NS	NS
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLL	NLV	NLV	8.0E+8	2.5E+6	NA		700	<300	NS	NS	NS	NS	NS
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLL	NLV	NLV	ID	2.0E+5	NA		800	<300	NS	NS	NS	NS	NS
Chrysene (Q)	218-01-9	NA	NLL	NLL	NLL	ID	ID	ID	2.0E+6	NA		1,300	500	NS	NS	NS	NS	NS
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLL	NLV	NLV	ID	2,000	NA		<300	<300	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	9.3E+9	4.6E+7	NA		2,000	700	NS	NS	NS	NS	NS
Fluorene	86-73-7	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	9.3E+9	2.7E+7	NA		<300	<300	NS	NS	NS	NS	NS
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		700	<300	NS	NS	NS	NS	NS
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		<300	<300	NS	NS	NS	NS	NS
Naphthalene	91-20-3	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		<300	<300	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	NA	56,000	5,300	1.1E+6	2.8E+6	1.6E+5	6.7E+6	1.6E+6	NA		1,500	400	NS	NS	NS	NS	NS
Pyrene	129-00-0	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.7E+9	2.9E+7	NA		1,700	600	NS	NS	NS	NS	NS

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											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	4-6	4-6	2-4	13-15	3-5	12-14	7-9
Volatiles																		
Acrylonitrile (I)	107-13-1	NA	100 (M); 52	100 (M,X); 98	2.8E+5	6,600	5,000	4.6E+7	16,000	8.3E+6		<200	<200	<100	<200	<200	<200	<100
Bromomethane	74-83-9	NA	200	700	1.4E+6	860	11,000	3.3E+8	3.2E+5	2.2E+6		<500	<400	<300	<300	<400	<300	<300
1,3-Dichlorobenzene	541-73-1	NA	170	1,100	51,000	ID	ID	ID	1.7E+5 (C)	1.7E+5		<200	<200	<100	<200	<200	<200	<100
Diethyl ether	60-29-7	NA	200	ID	7.4E+6 (C)	7.4E+6 (C)	8.5E+7	8.0E+11	7.4E+6 (C)	7.4E+6		<500	<400	<300	<300	<400	<300	<300
Ethylene dibromide	106-93-4	NA	20 (M); 1.0	20 (M); 4.0	500	670	1,700	1.4E+7	92	8.9E+5		<50	<40	<30	<30	<40	<30	<30
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		<800	<600	<500	<500	<600	<500	500
Methylene chloride	75-09-2	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	6.6E+9	1.3E+6	2.3E+6		<200	<200	<100	<200	<200	<200	<100
Naphthalene	91-20-3	NA	35,000	**870**	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		<800	<600	<500	<500	<600	<500	**1,100**
Tetrachloroethylene	127-18-4	NA	**100**	900 (X)	88,000 (C)	11,000	1.8E+5	5.4E+9	88,000 (C)	88,000		**200**	**150**	**200**	<80	**340**	<80	70
Vinyl chloride	75-01-4	NA	40	300	20,000	270	4,200	3.5E+8	3,800	4.9E+5		<100	<90	<70	<80	<90	<80	<70
Remaining VOCs	varies	-	-	-	-	-	-	-	-	-		BDL	BDL	BDL	BDL	BDL	BDL	BDL

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											Collection Date	12/17/2010	12/17/2010
											Depth (feet)	13-15	2-4
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg
Semivolatiles, PNAs													
Acenaphthene	83-32-9	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	1.4E+10	4.1E+7	NA		NS	500
Acenaphthylene	208-96-8	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.3E+9	1.6E+6	NA		NS	400
Anthracene	120-12-7	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	6.7E+10	2.3E+8	NA		NS	1,600
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		NS	4,200
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLL	NLV	NLV	1.5E+6	**2,000**	NA		NS	**3,700**
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	NLL	ID	ID	ID	20,000	NA		NS	3,700
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLL	NLV	NLV	8.0E+8	2.5E+6	NA		NS	1,000
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLL	NLV	NLV	ID	2.0E+5	NA		NS	3,600
Chrysene (Q)	218-01-9	NA	NLL	NLL	NLL	ID	ID	ID	2.0E+6	NA		NS	4,200
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLL	NLV	NLV	ID	2,000	NA		NS	<300
Fluoranthene	206-44-0	NA	7.3E+5	**5,500**	7.3E+5	1.0E+9 (D)	7.4E+8	9.3E+9	4.6E+7	NA		NS	**8,600**
Fluorene	86-73-7	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	9.3E+9	2.7E+7	NA		NS	700
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		NS	1,000
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		NS	<300
Naphthalene	91-20-3	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		NS	<300
Phenanthrene	85-01-8	NA	56,000	**5,300**	1.1E+6	2.8E+6	1.6E+5	6.7E+6	1.6E+6	NA		NS	**6,500**
Pyrene	129-00-0	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.7E+9	2.9E+7	NA		NS	8,000
Volatiles													
Acrylonitrile (I)	107-13-1	NA	100 (M); 52	100 (M,X); 98	2.8E+5	6,600	5,000	4.6E+7	16,000	8.3E+6		<200	<200
1,3-Dichlorobenzene	541-73-1	NA	170	1,100	51,000	ID	ID	ID	1.7E+5 (C)	1.7E+5		<200	<200
Ethylene dibromide	106-93-4	NA	20 (M); 1.0	20 (M); 4.0	500	670	1,700	1.4E+7	92	8.9E+5		<40	<30
Methylene chloride	75-09-2	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	6.6E+9	1.3E+6	2.3E+6		<200	<200
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	3.9E+11	2.9E+6	1.2E+8		<2,000	<2,000
Vinyl chloride	75-01-4	NA	40	300	20,000	270	4,200	3.5E+8	3,800	4.9E+5		<90	<80
Remaining VOCs	varies	-	-	-	-	-	-	-	-	-		BDL	BDL

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BORING LOG

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CO-SB-1

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	20 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
						TOPSOIL/GRASS		
			0		Light Brown	**FILL:** sand (fine to medium)	M	
2		80						
			0	CL	Brown/Gray	**CLAY:** trace gravel and silt, medium stiff to stiff, potential staining and odor from 3 to 7 feet bgs	M	
4								
			18.2					
6		100						
			0					
8								
			0			stiff to very stiff		
10		70						
			0					
12								
			0					
14		100						
			0					
16								
			0	CL	Grey	**CLAY:** trace gravel and silt, medium stiff to soft	M	
18		100						
			0					
20						End of Boring at 20 feet bgs		

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CO-SB-2

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	12 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
						TOPSOIL/GRASS		
2		60	0		Light Brown	**FILL:** sand (fine to medium), masonry debris	M	
4			0	CL	Brown/Gray	**CLAY:** trace gravel and silt, medium stiff to stiff, potential staining and odor from 3 to 7 feet bgs	M	
6		70	19.3					
8			0					
10		100	0					
12			0					
						End of Boring at 12 feet bgs		
14								
16								
18								
20								

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BORING LOG

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CO-SB-3

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
						TOPSOIL/GRASS		
			0		Light Brown	**FILL:** sand (fine to medium), masonry debris	M	
2		60		CL	Brown/Gray	**CLAY:** trace gravel and silt, medium stiff to stiff, potential staining from 2 to 2.5 feet bgs	M	
			0					
4								
			0					
6		70						
			0					
8						End of Boring at 8 feet bgs		
10								
12								
14								
16								
18								
20								

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CO-SB-4

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
						TOPSOIL/GRASS		
			0		Light Brown	**FILL:** sand (fine to medium)	M	
2		70						
			0	CL	Brown/Gray	**CLAY:** trace gravel and silt, medium stiff to stiff, potential staining from 3 to 5 feet bgs	M	
4								
			0					
6		100						
			0					
8						End of Boring at 8 feet bgs		
10								
12								
14								
16								
18								
20								

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CO-SB-5

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
						TOPSOIL/GRASS		
			0		Light Brown	**FILL:** sand (fine to medium)	M	
2		60			Brown/Gray	**FILL:** clay with trace gravel and silt, masonry debris, medium stiff to stiff, potential staining from 2 to 4 feet bgs	M	
			0					
4				CL	Brown/Gray	**CLAY:** trace gravel and silt, medium stiff to stiff	M	
			0					
6		100						
			0					
8						End of Boring at 8 feet bgs		
10								
12								
14								
16								
18								
20								

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BORING LOG

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CO-SB-6

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						TOPSOIL/GRASS		
			0		Light Brown	**FILL:** sand (fine to medium)	M	
2		80			Brown/Gray	**FILL:** clay with trace gravel and silt, masonry debris medium stiff to stiff, potential staining from 2 to 4 feet bgs	M	
			0					
4				CL	Brown/Gray	**CLAY:** trace gravel and silt, medium stiff to stiff	M	
			0					
6		100						
			0					
8						End of Boring at 8 feet bgs		
10								
12								
14								
16								
18								
20								

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CO-SB-7

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						TOPSOIL/GRASS		
2		20	0 0		Brown	**FILL:** clay, with sand and gravel	M	
4			0					
6		50	0	SP	Light Brown	**SAND:** fine to medium, masonry debris	M	
8						Auger Refusal at 8 feet bgs		
10								
12								
14								
16								
18								
20								

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CO-SB-8

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						TOPSOIL/GRASS		
			0		Brown	**FILL:** clay, trace silt and gravel	M	
2		60			Dark Brown/ Black	**FILL:** sand (fine to medium), trace gravel and silt, wood debris	M	
			0					
4								
			0	CL	Brown/Gray	**CLAY:** trace silt and gravel, medium stiff to stiff	M	
6		100						
			0					
8						End of Boring at 8 feet bgs		
10								
12								
14								
16								
18								
20								

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CO-SB-9

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	20 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
0			0		Brown	**FILL:** sand (fine to medium), trace silt and masonry debris	M	
2		90	0					
4			0	CL	Brown/Gray	**CLAY:** trace silt and gravel, medium stiff to stiff	M	
6		90	0					
8			0					
10		100	0					
12			0					
14		100	0	CL	Gray	**CLAY:** trace silt and gravel, medium stiff to soft	M	
16			0					
18		100	0					
20						End of Boring at 20 feet bgs		

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CO-SB-10

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	20 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
2		80	0		Brown	**FILL:** clay, with gravel	M	
4			0		Black	**FILL:** sand, with gravel and masonry debris	M	
6		85	0	CL	Brown/Gray	**CLAY:** trace silt and gravel, medium stiff to stiff	M	
8			0					
10		100	0					
12			0					
14		95	0	CL	Gray	**CLAY:** trace silt and gravel, medium stiff to soft	M	
16			0					
18		100	0					
20						End of Boring at 20 feet bgs		

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BORING LOG

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CO-SB-11

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	20 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	*GEOLOGIC DESCRIPTION*	MOISTURE	*TEMPORARY WELL DIAGRAM*
2		50	0		Brown	**FILL:** clay, with sand, gravel, and masonry debris	M	
4			0		Brown	**FILL:** sand, with gravel and masonry debris	M	
6		40	0					
8			0	CL	Brown/Gray	**CLAY:** trace silt and gravel, medium stiff to stiff	M	
10		100	0					
12			0					
14		100	0	CL	Gray	**CLAY:** trace silt and gravel, medium stiff to soft	M	
16			0					
18		100	0					
20						End of Boring at 20 feet bgs		

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BORING LOG

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CO-SB-12

Drawn By: D. Hutsell
Date: 12.22.10

DRILLING COMPANY:	LaPointe Environmental	WEATHER:	25 F Overcast
TECHNICIAN:	Dan LaPointe	BORING DEPTH:	8 Feet
DATE DRILLED:	12.17.10	DEPTH TO GW:	NA
DRILLING METHOD:	Geoprobe	SCREEN INTERVAL:	NA
FIELD GEOLOGIST:	Deanna Hutsell	SCREEN MATERIAL:	NA

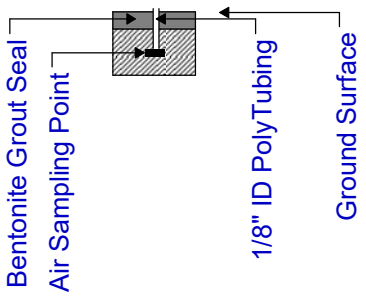
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						TOPSOIL		
			0		Light Brown	**FILL:** sand (fine to medium)	M	
2		60						
			0	CL	Brown/Gray	**CLAY:** trace silt and gravel, medium stiff to stiff, potential staining from 3 to 4 feet bgs	M	
4								
			0					
6		90						
			0					
8						End of Boring at 8 feet bgs		
10								
12								
14								
16								
18								
20								

Well Log .

Project No.: 02-6927-1
Well No.: SB/SG-1
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

Depth (ft.)	Description and Comments	Sample # / Depth	Blow Counts	PID (ppm)
0	Ground Surface			
	GRASS/GRAVEL		-	0
2	**SP- (Loose) SAND (Moist)** Brown, Medium Fine	SS-1 1.0-2.0'	-	0
	CL- (Stiff) CLAY (Moist) Brown, with trace Gravel and Brick		-	0
4			-	0
	CL- (Medium Stiff) CLAY (Moist) Brown and Grey, with trace Gravel		-	0
6			-	0
			-	0
8			-	0
	CL- (Medium Stiff) Clay (Moist) Grey and Black, with trace Gravel	SS-2 8.0-9.0'	-	0
10			-	0
			-	0
12			-	0
			-	0
14			-	0
	CL- (Soft) CLAY (Moist) Grey		-	0
16			-	0
			-	0
18			-	0
			-	0
20			-	0
			-	0
22			-	0
			-	0
24			-	0
26				

Groundwater Well Completion Details



Completion Notes: EOB @ 25' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted

Boring Log .

Project No.: 02-6927-1
Boring No.: SB-2
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
		GRASS/GRAVEL		-	0	
		SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0	
2			SS-1 2.0-3.0'	-	0	
		CL- (Stiff) CLAY (Moist) Black and Gray, with trace Gravel and Brick	SS-2 3.0-4.0'	-	0	
4				-	0	
		CL- (Stiff) CLAY (Moist) Brown, with trace Gravel		-	0	
6				-	0	
				-	0	
8				-	0	
				-	0	
10				-	0	
				-	0	
12		***CL- (Soft) Clay (Moist)*** Gray		-	0	
				-	0	
14				-	0	
16						

Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted.

Boring Log .

Project No.: 02-6927-1
Boring No.: SB-3
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
		GRASS		-	0	
		SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0	
2			SS-1 2.0-3.0'	-	12.4	
		CL- (Stiff) CLAY (Moist) Gray and Black		-	18.1	
4			SS-2 4.0-5.0'	-	40.6	
		CL- (Stiff) CLAY (Moist) Brown, with trace Gravel		-	7.2	
6				-	2.6	
				-	0.9	
8				-	0	
				-	0	
10				-	0	
				-	0	
12				-	0	
		CL- (Medium Soft) Clay (Moist) Gray		-	0	
14				-	0	
16						

Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted.

Boring Log .

Project No.: 02-6927-1
Boring No.: SB-4
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
		Ground Surface				
0		***GRASS***		-	0	
		SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0	
2				-	0	
			SS-1 2.5-3.5'	-	0	
4		***CL- (Stiff) CLAY (Moist)*** Brown and Gray, with trace Gravel		-	0	
				-	0	
6		***CL- (Stiff) CLAY (Moist)*** Brown, with trace Gravel		-	0	
				-	0	
8				-	0	
				-	0	
10				-	0	
				-	0	
12		***CL- (Soft) Clay (Moist)*** Gray		-	0	
				-	0	
14				-	0	
16						

Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted.

Boring Log .

Project No.: 02-6927-1
Boring No.: SB-5
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
		GRASS/GRAVEL		-	0	
		CL- (Stiff) SANDY CLAY (Moist) Brown, with gravel	SS-1 1.0-2.0'	-	0	
2		***CL- (Stiff) CLAY (Moist)*** Brown, with trace Gravel		-	0	
				-	0	
4				-	0	
				-	0	
6				-	0	
				-	0	
8				-	0	
				-	0	
10				-	0	
				-	0	
12				-	0	
		CL- (Medium Soft) CLAY (Moist) Gray		-	0	
14				-	0	
16						

Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted.

Boring Log .

Project No.: 02-6927-1
Boring No.: SB-6
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
		CONCRETE		-	0	
		SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0	
2				-	0	
				-	0	
4		***GW- (Loose) GRAVELLY SAND (Moist)*** Gray and Black, medium course		-	0	
			SS-1 5.0-6.0'	-	0	
6		***CL- (Stiff) CLAY (Moist)*** Brown, with trace Gravel		-	0	
				-	0	
8				-	0	
				-	0	
10				-	0	
				-	0	
12				-	0	
				-	0	
14		***CL- (Medium Stiff) CLAY (Moist)*** Gray		-	0	
16						

Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted.

Boring Log .

Project No.: 02-6927-1
Boring No.: SB-7
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

SUBSURFACE PROFILE			SAMPLE			
Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)	No Well Installed
0		Ground Surface				
		GRASS		-	0	
		SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0	
2				-	0	
		CL- (Stiff) CLAY (Moist) Gray and Brown, with trace Gravel	SS-1 3.0-4.0'	-	0	
4				-	0	
				-	0	
6		***CL- (Stiff) CLAY (Moist)*** Brown, with trace Gravel		-	0	
				-	0	
8				-	0	
			SS-2 9.0-10.0'	-	0	
10				-	0	
				-	0	
12				-	0	
		CL- (Medium Soft) CLAY (Moist) Gray		-	0	
14				-	0	
16						

Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

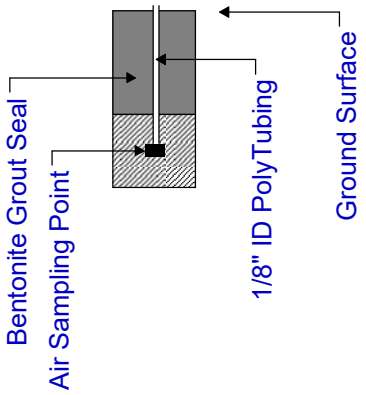
1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted.

Well Log .

Project No.: 02-6927-1
Well No.: SB/SG-8
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

Depth (ft.)	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)
0	Ground Surface			
	GRASS/GRAVEL		-	0
	SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0
2	***CL- (Stiff) CLAY (Moist)*** Gray and Brown, with trace Gravel	SS-1 2.0-3.0'	-	0.2
			-	0
4	***CL- (Stiff) CLAY (Moist)*** Brown, with trace Gravel		-	0
			-	0
6			-	0
	GW- (Loose) GRAVELLY SAND (Moist) Medium course, with clay	SS-2 7.0-8.0'	-	0
8	***CL- (Stiff) CLAY (Moist)*** Brown		-	0
			-	0
10			-	0
			-	0
12			-	0
			-	0
14			-	0
16				

Groundwater Well Completion Details



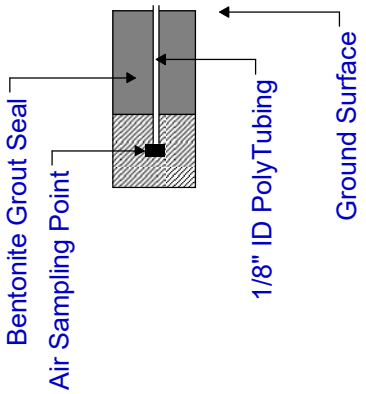
Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted

Well Log .

Project No.: 02-6927-1
Well No.: SB/SG-9
Project Name: 12 Vacant
Date Drilled: 12/18/2013
Facility ID#:
Drill Rig: 6610 DT
Logged By: KL
Sampling Method: 2.25" MC

Depth (ft.)	Boring Profile	Description and Comments	Sample # Depth	Blow Counts	PID (ppm)
0		Ground Surface			
		GRASS/GRAVEL		-	0
		SP- (Loose) SAND (Moist) Brown, Medium Fine		-	0
2		***CL- (Stiff) CLAY (Moist)*** Black and Gray	SS-1 2.0-3.0'	-	3.9
		CL- (Stiff) CLAY (Moist) Brown and Gray, with trace Gravel		-	0.6
4				-	0.7
				-	0
6				-	0
		CL- (Stiff) CLAY (Moist) Brown, with trace Gravel		-	0
8				-	0
				-	0
10				-	0
				-	0
12				-	0
		CL- (Soft) CLAY (Moist) Gray	SS-2 13.0-14.0'	-	0
14				-	0
16					



Completion Notes: EOB @ 15' bgs. Hole filled with Bentonite

1. The indicated stratification lines are approximate in situ. The transitions between materials may be gradual.
2. Boring backfilled with natural soils unless otherwise noted

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PHASE II ENVIRONMENTAL SITE ASSESSMENT

Vacant Land
5800 Michigan Avenue and 3951-3957 Campbell Street | Detroit, Michigan
PM Project Number 01-12749-1-0001

Prepared for:

Southwest Housing Solutions Corporation
1920 25th Street, Suite A
Detroit, Michigan 48216

Prepared by:

PM Environmental, Inc.
4080 West Eleven Mile Road
Berkley, Michigan 48072

PM ENVIRONMENTAL
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Michigan Locations
Berkley **Lansing**
Grand Rapids **Oak Park**
Flint

March 25, 2022

Ms. Janay Mallett
Southwest Housing Solutions Corporation
1920 25th Street, Suite A
Detroit, Michigan 48216

Re: Phase II Environmental Site Assessment of the Vacant Land Located at 5800 Michigan Avenue and 3951-3957 Campbell Street, Detroit, Michigan
PM Environmental, Inc. Project No. 01-12749-1-0001

Dear Ms. Mallett:

PM Environmental, Inc. (PM) completed a Phase II Environmental Site Assessment (ESA) of the Commercial Property located at 5800 Michigan Avenue and 3951-3957 Campbell Street, Detroit, Wayne County, Michigan (hereafter referred to as the "subject property") in general accordance with ASTM Standard Practice E 1903-19 to assess the Recognized Environmental Conditions (RECs) identified in PM's Phase I ESA dated January 15, 2021. This Phase II ESA Report summarizes the activities conducted by AKT and PM between 2010 and 2021, the geology encountered, and the sample analytical results.

THIS PHASE II ESA REPORT WAS PERFORMED FOR THE EXCLUSIVE USE OF 5800 LDHA LP, SOUTHWEST HOUSING SOLUTIONS CORPORATION, AND THE MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

INTRODUCTION AND BACKGROUND

The subject property consists of three parcels of land (Parcel IDs: 16001706-8, 16014695, and 146014694) containing 0.832 acres and is located on the north of Michigan Avenue, west of North Campbell Street, and east of Wesson Street in Detroit, Michigan (Figure 1). The subject property is currently vacant and unoccupied and includes areas of gravel and seeded topsoil/grass (Figure 2).

Standard and other historical sources were able to document the first developed use of the subject property occurred prior to 1884 with a hotel and associated outbuilding in the southeastern portion and a dwelling in the southern portion. Four additional dwellings were constructed in the eastern portion between 1884 and 1910. The southwestern storefront received an eastern addition and the former dwelling and structures in the southern and southeastern portions were demolished between 1910 and 1924 when a bowling alley building and storefront were constructed. A gasoline dispensing station was also constructed in the southern portion between 1910 and 1924 with one gasoline underground storage tank (UST) depicted in Sanborn maps. By 1941, three USTs were depicted in Sanborn maps east of the gasoline dispensing station, and by 1949, the gasoline dispensing station was demolished. The dwellings were demolished between the 1950s and 1970s, and the bowling alley building was demolished between 1999 and 2002. The subject property has consisted of vacant land since that time.

The subject property at 5800 Michigan Avenue was formerly occupied by gasoline dispensing station and vulcanizing operations and the subject property was historically occupied by various commercial and/or retail businesses or used for residential purposes.

PHASE I ESA

PM performed a Phase I ESA for the subject property dated January 15, 2021, in conformance with the scope and limitations of ASTM Standard Practice E1527-13, which identified the following on-site REC/vapor encroachment condition (VEC) associated with the current subject property:

- The subject property at 5800 Michigan Avenue was historically occupied by gasoline dispensing operations from between 1910 and 1921 until at least 1949 and vulcanizing operations from between 1910 and 1924 until between 1941 and 1949. Previous site assessment activities completed in 2011 and 2014 document that soil contamination is present in the southwestern portion above current Part 201 Residential and Nonresidential Direct Contact (DC) Cleanup Criteria. The subject property is classified as a "facility", as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended. Additionally, the analytical results for phenanthrene analyzed from the soil samples collected in the southeastern and western portions of 5800 Michigan Avenue are indictive of a potential vapor intrusion risk.

No adjoining and/or nearby RECs were identified in PM's January 2021 Phase I ESA.

PREVIOUS SITE INVESTIGATIONS

PM reviewed the following previous environmental reports and/or portions of the following reports for the subject property. Previous reports are on file with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) or relevant portions of the reports may be on file with EGLE in the previously submitted BEA report. Additionally, relevant available figures and tables from the previous reports are included in Appendix A.

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	11-10-2010	Advanced Environmental Management Group (AEMG)
Phase II ESA	1-7-2011	AKT Peerless (AKT)
Phase I ESA	11-22-2013	PM
Phase II ESA	3-31-2014	
Baseline Environmental Assessment (BEA)		

Phase I ESA 2010

PM reviewed a previous Phase I ESA completed for the subject property and west adjoining properties and dated November 10, 2010. At the time of the Phase I ESA, the subject property consisted of vacant land with scattered debris throughout. AEMG documented similar historical information as included in PM's January 2021 Phase I ESA, and the following historical use RECs were identified: gasoline dispensing station with potential orphan USTs associated (5830 Michigan Avenue), vulcanizing (5836 Michigan Avenue), greenhouse (west adjoining property),

dry cleaning (west adjoining property), photo developing (west adjoining property), automotive parking operations (west adjoining property); potential fuel oil use (west adjoining property); negative impacts from potential chemicals associated with a fire at 4034-4038 Wesson Street (west adjoining property); and a REC associated with the presence of construction debris and materials throughout the property. AEMG recommended an additional investigation be completed to assess the RECs.

Phase II ESA 2011

The 2011 Phase II ESA evaluated the RECs identified in AEMG's Phase I ESA, and consisted of 1) conducting a geophysical survey in the southern portion of the subject property; 2) advancing 12 soil borings (CO-SB-1 through CO-SB-6, and CO-SB-12 on the subject property); and, 3) collecting 22 soil samples for laboratory analysis of volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), polychlorinated biphenyls (PCBs), diesel range organics (DRO), gasoline range organics (GRO), herbicides, pesticides, and Michigan 10 Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), or some combination thereof.

Geology encountered during the investigation consisted of fill material to 5.0 feet below ground surface (bgs) consisting of sand and clay with varying amounts of silt, gravel, and masonry debris, underlain by clay to 20.0 feet bgs, the maximum depth explored. Groundwater was not encountered to 20.0 feet bgs, the maximum depth explored. Soil boring logs were not included in the report provided to PM; however, soil borings were limited to the southern-central and southwestern portions of the 5800 Michigan Avenue parcel.

The geophysical survey identified an anomaly in the northwest portion of 5800 West Michigan Avenue. AKT concluded that the anomaly may be a potential former septic tank; however, this was not confirmed. In addition, the geophysical survey was conducted using electromagnetic (EM) induction, and not ground penetrating radar (GPR), which is a more accurate method. The soil analytical results documented concentrations of benzo(a)pyrene above current Part 201 Residential DC cleanup criteria in the soil sample collected in the northwestern portion of the subject property at 5800 Michigan Avenue (CO-SB-12), which was advanced adjacent to the anomaly identified during the EM scan.

The figures and tables depicting the sample locations and analytical summaries from the AKT's 2011 site investigation are included in Appendix A. In addition, the sample locations from AKT's 2011 site investigation conducted on the subject property are included on PM's Figure 3.

Phase I ESA 2013

The 2013 Phase I ESA was completed for the subject property and west adjoining properties. At the time of the Phase I ESA, the subject property was vacant land. Similar historical information was documented as in PM's January 2021 Phase I ESA. The following RECs were identified.

- Previous reports completed for the subject property in 2010 and 2011 identified the potential for former fuel oil use and associated USTs as a REC. Additionally, the potential for fill materials to be present associated with the former buildings and dwellings was identified as a REC. No subsurface investigations, including a geophysical survey, were conducted in the central and northern portions of the subject property to

assess potential fill material within former basements and potential orphan USTs and/or fuel oil use. The potential exists for contamination to be present in these areas and/or for orphan tanks to be present.

- The 2011 subsurface investigation completed by AKT was not adequate to assess the former vulcanizing operations (5836 Michigan Avenue), gasoline dispensing operations (5830 Michigan Avenue), and former dry-cleaning operations (west adjoining property). In addition, no further assessment of an anomaly (most likely associated with an orphan UST) detected through a geophysical survey using EM induction, in the northwest portion of 5800 Michigan Avenue, was conducted. The potential exists for additional contamination to be present in the areas that were not previously, or not adequately assessed.

Phase II ESA 2014

The 2014 Phase II ESA was completed for the 3951-3957 Campbell Street subject property and the west adjoining properties. The Phase II ESA evaluated the RECs identified in PM's 2013 Phase I ESA and consisted of 1) conducting a geophysical survey of the subject property and west adjoining properties using GPR; 2) advancing four soil borings (SB-14 and SB-15 on the subject property); and, 3) collecting four soil samples for laboratory analysis of VOCs, PNAs, PCBs, and Michigan 10 metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), or some combination thereof.

Geology encountered during the investigation consisted of clayey sand to 5.5 feet bgs, underlain by clay to 15.0 feet bgs, the maximum depth explored. Groundwater was not encountered. Fill materials were not encountered in the soil borings completed for the Campbell Street subject parcels.

No anomalies consistent with orphan USTs were identified during the geophysical survey investigation. No concentrations of VOCs, PNAs, or PCBs were detected in any of the soil samples collected from the subject property above laboratory method detection limits (MDLs). No concentrations of metals were detected in any of the soil samples collected from the subject property above laboratory MDLs, Statewide Default Background Levels (SDBLs), or the most restrictive Part 201 Residential cleanup criteria. Based on the analytical results, the 3951-3957 Campbell Street subject parcels do not meet the definition of a "facility" as defined under P.A. 451 of Part 201. The RECs identified in the 2013 Phase I ESA were adequately assessed, and no further investigation of the 3951-3957 Campbell Street subject parcels was recommended.

The sample locations and analytical summaries from the PM's 2013 site investigation are included on Figure 3 and in Table 1 and 2.

BEA 2014

The 2014 subsurface investigation, which is summarized in the BEA, was completed for the 5800 Michigan Avenue subject parcel. The subsurface investigation evaluated the RECs identified in PM's 2013 Phase I ESA and consisted of 1) conducting a geophysical survey of the subject property using GPR; 2) advancing nine soil borings (SB-1 through SB-9) and installing three temporary soil gas points (SG-1, SG-8, and SG-9); and, 3) collecting 10 soil samples for

laboratory analysis of VOCs, PNAs, PCBs, and Michigan 10 metals, or some combination thereof, and collection of three soil gas samples for laboratory analysis of VOCs.

No anomalies consistent with the presence of orphan USTs were identified during completion of the geophysical survey investigation. During the completion of the geophysical survey, PM identified a disturbance in the vicinity of the anomaly identified by AKT. A hand auger was advanced to 5.0 feet bgs followed by a Geoprobe soil boring to 15.0 feet bgs to determine the nature of the disturbance. No evidence of an orphan UST was encountered. Based on the geophysical survey and soil boring completed by PM in the area of AKT's anomaly, no orphan USTs are believed to be present in this area. Concentrations of benzo(a)pyrene were detected in soil samples collected in the western-central portion of the property (SB-7 and SB-8) above Part 201 Residential and Nonresidential DC cleanup criteria. Lead was also detected from one soil sample collected in the western-central portion of the property (SB-8) above Part 201 Residential and Nonresidential DC cleanup criteria. No other VOCs, PNAs, PCBs, or metals were detected in the remaining soil samples collected from the subject property above laboratory MDLs, the SDBLs, and/or the most restrictive Part 201 Residential cleanup criteria. No soil gas samples were detected above former Part 201 Residential Intrusion Screening Levels. However, concentrations of phenanthrene were detected in soil samples collected in the southeastern and western-central portions of the subject property (SB-1, SB-2, and SB-8) above the current Part 201 Residential Volatilization to Indoor Air Pathway (VIAP) screening levels.

The sample locations and analytical summaries from the PM's 2013 site investigation are included on Figures 3 and 4 and in Tables 1, 2, and 3.

Based on the concentrations of benzo(a)pyrene and lead in soil exceeding the Part 201 cleanup criteria on the subject property parcel identified as 5800 Michigan Avenue, a BEA was completed and submitted to the Michigan Department of Environmental Quality (MDEQ; currently referred to as EGLE) on behalf of Southwest Housing Solutions Corporation.

CURRENT PHASE II ESA SITE INVESTIGATION

Prior to the commencement of field activities, Miss Dig, a utility locating service, was contacted to locate utilities on or adjacent to the subject property. Utilities were marked by the respective utility companies where they entered or were located adjacent to the subject property. PM also used a RD1700 Utility Locator to clear proposed boring locations prior to advancing the soil borings.

On November 22, 2021, PM completed subsurface investigation activities at the subject property that consisted of the advancement of 11 soil borings (SB-13 through SB-23), installation of three temporary soil gas points (SG-13, SG-14, and SG-20), and the collection of 22 soil samples and three soil gas samples to further assess the previously identified contamination identified on the subject property during the previous site investigations. The soil samples were submitted for laboratory analysis of VOCs, PNAs, and lead. The soil gas samples were submitted for laboratory analysis of VOCs.

The soil boring and temporary soil gas locations are depicted on Figures 3 and 4.

Subsurface Investigations Techniques and QA/QC Procedures

The soil borings were advanced to the desired depth using a Geoprobe® drill rig. Soil sampling was performed for soil classification, verification of subsurface geologic conditions, and for investigating the potential and/or extent of soil and/or groundwater contamination at the subject property. Soil samples were generally collected on a continuous basis using a 5-foot long macro-core sampler.

During drilling operations, the drilling equipment was cleaned to minimize the possibility of cross contamination. These procedures included cleaning equipment with a phosphate free solution (i.e., Alconox®) and rinsing with distilled water after each sample collection. Drilling and sampling equipment was also cleaned in this manner prior to initiating field activities.

Soils collected from discrete sample intervals were screened using a photoionization detector (PID) to determine if VOCs were present. Soil from specific depths was placed in plastic bags, sealed, and allowed to volatilize. The headspace within each bag was then monitored with the PID. The PID is able to detect trace levels of organic compounds in the air space within the plastic bag. The PID utilizes a 10.6 electron volts (eV) lamp. Soil samples were collected from the soil borings based upon the highest PID reading, visual/olfactory evidence of impact, a change in geology, and/or depths likely to encounter impact.

The soil samples for VOC analysis were preserved with methanol in accordance with United States Environmental Protection Agency (USEPA) Method 5035 modified.

The soil samples were collected in appropriately labeled containers and placed in an ice-packed cooler, then transported under chain of custody procedures for laboratory analysis within applicable holding times to Merit Laboratories, Inc. (Merit) in East Lansing, Michigan.

The in-boring soil gas sampling points were installed per manufacturer specifications within the annulus of the borehole advanced with the Geoprobe® drill rig or hand auger equipped with a stainless steel bucket. Approximately 6-inches of sand pack was installed at the bottom of the desired sample depth and a ceramic filter sample point attached to ¼" inert Teflon tubing was lowered into the borehole which was followed by the installation of an additional 6-inch layer of sand pack above the sample point. Bentonite was installed above the sand pack and hydrated to create a chemically resilient, low-permeability, flexible seal to prevent the exchange of atmospheric air with the soil gas and to maximize the representativeness of the sample. A minimum of 45 minutes was allowed to elapse after installation to allow equilibration of the subsurface soil vapor prior to sampling.

Upon completion of the investigation, the temporary soil gas materials were removed and the soil borings were abandoned by placing the soil cuttings back into the borehole, filling the void with bentonite chips, hydrating the chips, resurfacing and returning the area to its pre-drilling condition.

GEOLOGY/HYDROGEOLOGY

Based on a review of PM's December 2013 and November 2021 soil boring logs, the geology encountered on the subject property generally consists of sand to depths up to 3.5 feet bgs, underlain by clay to a depth of at least 10.0 feet bgs, the maximum depth explored during PM's

2021 site investigation. Debris (brick, concrete, and/or asphalt) was encountered at depths ranging from 0.5 to 4.5 feet bgs in each of the soil borings advanced by PM in November 2021.

Groundwater was not encountered in any of the soil borings advanced on the subject property to a maximum depth of 10.0 feet bgs.

PM's November 2021 soil boring and temporary soil gas logs are included in Appendix B.

ANALYTICAL RESULTS

PM compared the previous and current analytical results of the samples collected from the subject property with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity", in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria.

PM also compared the soil and soil gas analytical results with Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) developed by EGLE on March 21, 2022, for a residential slab-on-grade structure with elevator pit. The EGLE SSVIAC Memo is included in Appendix C.

The laboratory analytical reports and associated chain of custody documentation from PM's November 2021 site investigation are included in Appendix D. The laboratory analytical reports and associated chain of custody documentation for the previous site investigations conducted by PM and AKT are on file with EGLE in the previously submitted reports.

Summary of Soil Analytical Results and Exceedances

The sample locations and analytical summaries from the PM's December 2013 and November 2021 site investigations are included on Figures 3 and 4 and in Tables 1, 2, and 3.

The sample locations and analytical summaries from the previous site investigations conducted by AKT are included in Appendix A. The sample locations from the previous site investigations conducted by AKT are also included on PM's Figures 3 and 4.

Summary of Soil Exceedances

Location	Sample Date	Sample Depth (feet bgs)	Analysis	Compounds Exceeding the Part 201 Cleanup Criteria/SSVIAC
December 2010, AKT				
CO-SB-12	12/17/2010	**Soil:** 2.0-4.0	VOCs and PNAs	**GSIP:** fluoranthene, phenanthrene **DC(R):** benzo(a)pyrene **SSVIAC(R):** phenanthrene
December 2013, PM				
SB-2	12/18/2013	**Soil:** 3.0-4.0	VOCs and PNAs	**GSIP:** phenanthrene **SSVIAC(R):** phenanthrene

Location	Sample Date	Sample Depth (feet bgs)	Analysis	Compounds Exceeding the Part 201 Cleanup Criteria/SSVIAC
SB-7	12/18/2013	**Soil:** 3.0-4.0	VOCs and PNAs	**DC(R):** benzo(a)pyrene **GSIP:** fluoranthene **SSVIAC(R):** Naphthalene, phenanthrene
SB-8	12/18/2013	**Soil:** 2.0-3.0	VOCs, PNAs, PCBs, and Michigan 10 Metals	**DC(R):** lead **DC(R/NR):** benzo(a)pyrene **GSIP:** fluoranthene, phenanthrene, naphthalene **SSVIAC(R):** naphthalene, phenanthrene
November 2021, PM				
SB-13	11/22/2021	**Soil:** 4.5-5.5	VOCs, PNAs and Lead	**SSVIAC(R):** naphthalene
SB-14	11/22/2021	**Soil:** 3.0-4.0	VOCs, PNAs and Lead	**DC(R):** benzo(a)pyrene **GSIP:** fluoranthene, phenanthrene **SSVIAC(R):** phenanthrene
SB-16	11/22/2021	**Soil:** 3.0-4.0	VOCs, PNAs and Lead	**DC(R):** benzo(a)pyrene **GSIP:** fluoranthene, phenanthrene **SSVIAC(R):** phenanthrene, naphthalene
SB-17	11/22/2021	**Soil:** 3.5-4.5	VOCs, PNAs and Lead	**DC(R):** benzo(a)pyrene **GSIP:** fluoranthene, phenanthrene **SSVIAC(R):** phenanthrene
SB-18	11/22/2021	**Soil:** 2.5-3.5	VOCs, PNAs and Lead	**DC(R):** benzo(a)pyrene, lead **GSIP:** fluoranthene, phenanthrene **SSVIAC(R):** phenanthrene
SB-20	11/22/2021	**Soil:** 3.0-4.0	VOCs, PNAs and Lead	**DWP(R/NR):** lead **DC(R):** lead
		Soil: 5.0-6.0		**DC(R):** benzo(a)pyrene **GSIP:** fluoranthene, phenanthrene, naphthalene **SSVIAC(R):** phenanthrene, naphthalene
SB-21	11/22/2021	**Soil:** 2.5-3.5	VOCs, PNAs and Lead	**DC(R):** benzo(a)pyrene **GSIP:** fluoranthene, phenanthrene **SSVIAC(R):** 2-methylnaphthalene, phenanthrene, naphthalene
SB-22	11/22/2021	**Soil:** 2.5-3.5	VOCs, PNAs and Lead	**DWP(R/NR):** Lead **DC(R):** Lead
SB-23	11/22/2021	**Soil:** 2.5-3.5	VOCs, PNAs and Lead	**GSIP:** naphthalene, fluoranthene, phenanthrene **DWP(R/NR):** lead **DC(R):** benzo(a)pyrene **DC(R/NR):** lead **SSVIAC(R):** phenanthrene, naphthalene

R – Residential
DWP – Drinking Water Protection
DC – Direct Contact
NR – Nonresidential
GSIP – Groundwater Surface Water Interface Protection
SSVIAC – Site-Specific Volatilization to Indoor Air Criteria

No other concentrations of VOCs, PNAs, and/or lead was identified in the remaining soil samples above the laboratory MDLs, EGLE SSVIAC, and/or the most restrictive Part 201 Residential cleanup criteria.

Concentrations of GRO and DRO were identified in the soil samples collected from CO-SB-1 and CO-SB-2 above the laboratory MDLs. No concentrations of GRO exceed the Light Non-Aqueous Phase Liquid (LNAPL) screening levels indicating the potential presence of residual LNAPL in soils. A concentration of DRO was identified in soil sample CO-SB-1 indicating the potential presence of residual LNAPL in soil and above the LNAPL screening levels indicating that the generic Part 201 Soil Volatilization to Indoor Air Inhalation generic cleanup criteria are not appropriate for comparison; however, as previously discussed, EGLE generated SSVIAC for the subject property and no concentrations of VOCs and PNAs were identified in these samples exceeding the SSVIAC. No concentrations of DRO were identified at levels exceeding the LNAPL DC screening levels that would indicate that the generic Part 201 DC cleanup criteria are not appropriate for comparison.

Soil Gas Analytical Results

No concentrations of VOCs were detected in the soil gas samples collected in November 2013 and December 2021 analyzed from the subject property above laboratory MDLs and/or EGLE SSVIAC for a residential slab-on-grade building with elevator pit. No concentrations of PNAs and/or SVOCs, and Mercury were detected in the soil gas samples collected in December 2021 analyzed from the subject property above laboratory MDLs.

EXPOSURE PATHWAY EVALULATION

The following exposure pathways were evaluated and determined to be complete/potentially complete. Exposure pathways are eliminated when they are determined not to be complete, or it is demonstrated that unacceptable exposures do not exist and that response activities are not required to prevent or mitigate unacceptable exposures.

The subject property is currently zoned B-4: General Business District. However, the subject property will be redeveloped with a slab-on-grade residential building with elevator pit in the southern portion of the subject property (Figure 2). Therefore, the intended use and zoning is consistent with Residential property use as defined under Part 201. The subject property is available to be connected to municipal water and sewer, as well as natural gas, electrical, and telecommunications utilities. No water supply wells exist in association with the subject property.

The following exposure pathway analysis is based on the currently known information collected during the previous and current site investigations. If evidence is discovered of additional impact, the exposure pathways will need to be re-evaluated.

Complete and/or Potentially Complete Exposure Pathway?		
Pathway	**Yes/No**	**Justification**
Groundwater Ingestion	No	• Municipal water is available in the area of the subject property. • No potable or other supply wells exist on the subject property.

Complete and/or Potentially Complete Exposure Pathway?		
Pathway	**Yes/No**	**Justification**
Surface Water	No	• Surface water is not present at the subject property. • A combined sanitary/storm sewer system is utilized in the area of the subject property. • Lack of groundwater to act as a transport mechanism.
Indoor Air Inhalation	No*	• The subject property is currently vacant. • Concentrations of various VOCs and PNAs were identified in soil exceeding the applicable SSVIAC. • No concentrations of VOCs, semi-volatile organic compounds (SVOCs)/PNAs, and mercury were identified in the soil gas samples collected from the subject property above the SSVIAC.
Ambient Air Volatile Soil Inhalation	No	• No identified exceedances to the most restrictive Part 201 Residential Ambient Air Volatile Soil Inhalation (VSI) cleanup criteria.
Ambient Air Particulate Soil Inhalation	No	• No identified exceedances to the most restrictive Part 201 Residential Ambient Air Particulate Soil Inhalation (PSI) cleanup criteria.
Direct Contact	Yes	• Concentrations of benzo(a)pyrene and lead were detected in soil samples above the Part 201 Residential and/or Nonresidential DC cleanup criteria.

* - This pathway is incomplete based on the current absence of occupiable structures on the subject property. However, additional response activities (i.e., additional monitoring, remediation, and/or mitigation) is required in the event new buildings are constructed on the subject property.

OTHER PATHWAYS AND DUE CARE CONSIDERATIONS	
Migration Via Utility Corridors or other means	Utility corridors on or adjacent to the subject property may represent pathways for contaminant migration; however, were not specifically assessed by PM.
Fire and Explosion Hazards	No compounds were identified above the flammability and explosivity screening levels and mobile and/or migrating LNAPL has not been identified on the subject property.
Soil and Groundwater Management	In the event that soil and/or groundwater are to be moved at the subject property, additional characterization will be required to determine proper disposal. Water on the property is municipally supplied, and the property owner will assure that groundwater is not utilized for any purpose.

CONCLUSIONS

Contaminant concentrations identified in soil on the subject property during site investigations conducted between 2010 and 2021 document exceedances of the Part 201 Residential and Nonresidential, DWP, GSIP, and DC cleanup criteria and the EGLE SSVIAC. Therefore, the subject property is a "facility" under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder. In addition, concentrations of various VOCs and PNAs were identified in soil samples collected from the subject property exceeding the SSVIAC, indicating a potential vapor intrusion condition as it relates to the planned residential redevelopment of the property.

Section 7a of Parts 201 imposes "due care" obligations on owners and operators of contaminated properties that are generally described as 1) prevent exacerbation; 2) mitigate unacceptable exposure and operate in a manner that protects the public health and safety; 3) take reasonable precautions against third party omissions; 4) reasonably cooperate with parties

authorized to conduct response activities; 5) comply with land or resource use restrictions; and, 6) not impede any land or resource use restrictions.

As previously discussed, concentrations of various VOCs, PNAs, and lead were identified that present a potential unacceptable exposure via the dermal contact and soil volatilization to indoor air inhalation pathways in association with the planned residential redevelopment of the subject property. Therefore, additional assessment (i.e., delineation), remediation (i.e., removal of source soils), and/or mitigation (i.e., installation of surface cover and/or vapor mitigation systems) are required to prevent unacceptable exposures based on the intended residential redevelopment of the subject property.

If you have any questions regarding the information in this report, please contact us at 800.313.2966.

Report Prepared By:
PM Environmental, Inc.

Jana Beumel
Staff Scientist

Report Reviewed By:
PM Environmental, Inc.

Nicholas Lieder
Regional Manager – Site Investigation Services

FIGURES

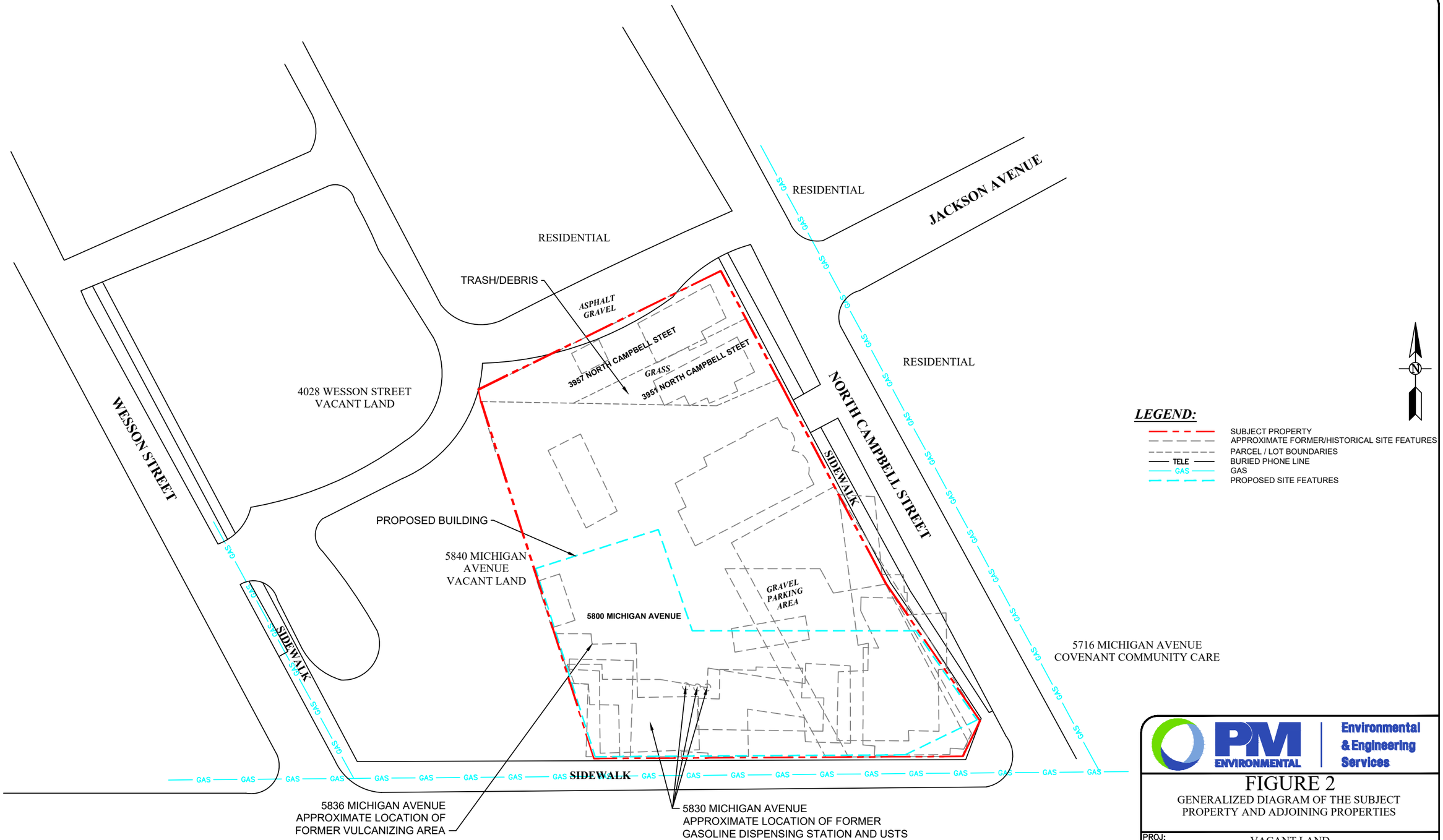
Figure 1: Property Vicinity Map
Figure 2: Subject Property and Adjoining Properties
Figure 3: Soil Analytical Results
Figure 4: Soil Gas Analytical Results

TABLES

Table 1: Summary of Soil Analytical Results – VOCs, PNAs, and Lead
Table 2: Summary of Soil Analytical Results – PCBs, and Metals
Table 3: Summary of Soil Gas Analytical Results – VOCs, SVOCs, and Mercury

APPENDICES

Appendix A: Relevant Tables and Figures from Previous Site Investigations
Appendix B: Soil Boring/Soil Gas Logs
Appendix C: Site-Specific Volatilization to Indoor Air Criteria Memo
Appendix D: Laboratory Analytical Reports



MICHIGAN AVENUE

5845-5849 MICHIGAN AVENUE
VACANT COMMERCIAL BUILDING

5837-5841 MICHIGAN AVENUE
VACANT LAND

5831-5833 MICHIGAN AVENUE
VACANT COMMERCIAL BUILDING

5715 MICHIGAN AVENUE
SOCIAL SERVICES
ADMINISTRATION

PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

PROJ:
VACANT LAND
5800 MICHIGAN AVENUE AND
3951-39578 CAMPBELL STREET
DETROIT, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: MM/CS/TS/MM/BP	DATE: 1/11/2020
VERIFY SCALE 0 50' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: BP	SCALE: 1" = 50'
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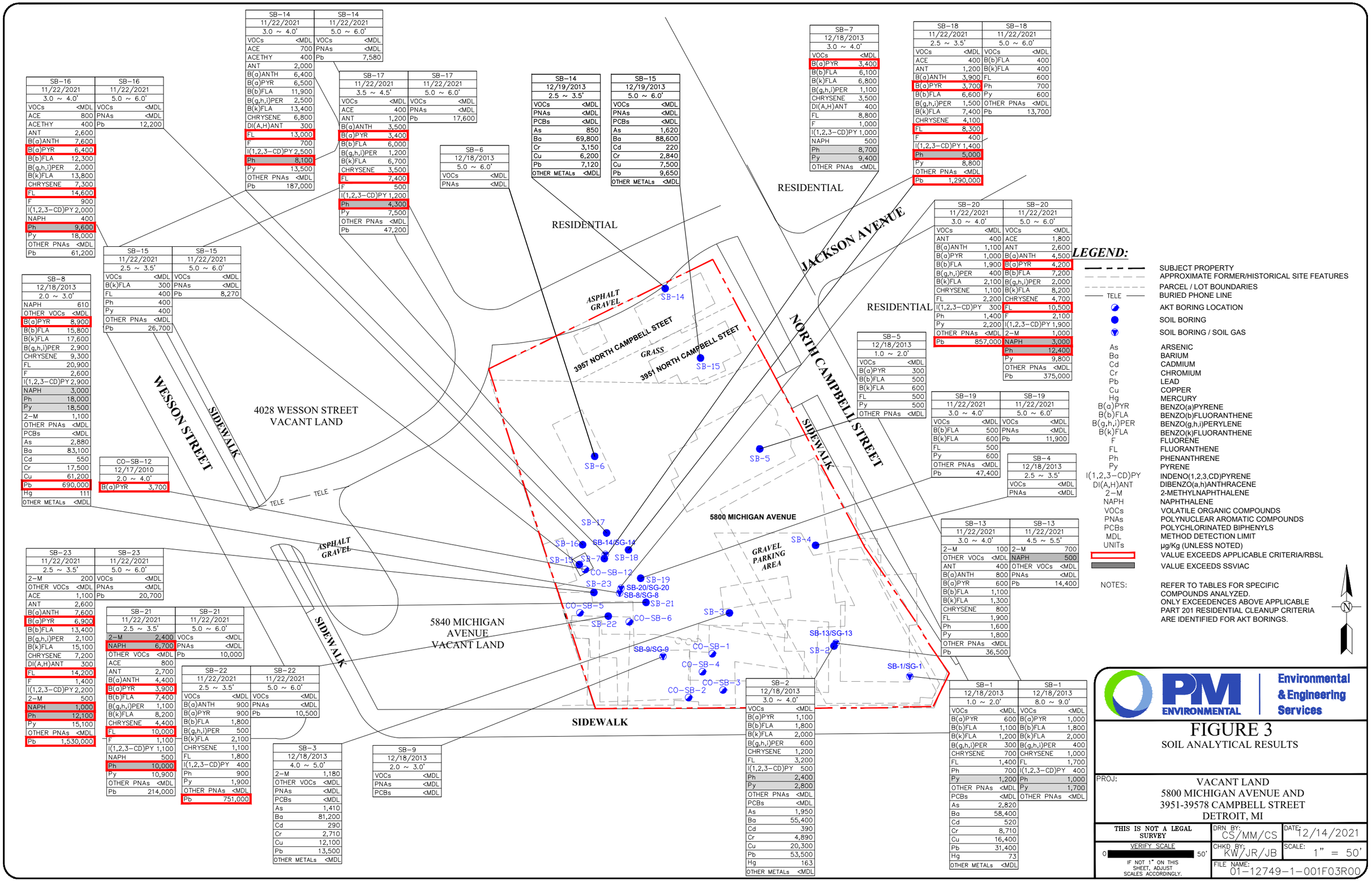

SB-14
11/22/2021
3.0 ~ 4.0'
VOCs <MDL
ACE 700
ACETHY 400
ANT 2,000
B(a)ANTH 6,400
B(a)PYR 6,500
B(b)FLA 11,900
B(g,h,i)PER 2,500
B(k)FLA 13,400
CHRYSENE 6,800
DI(A,H)ANT 300
FL 13,000
F 700
I(1,2,3-CD)PY 2,500
Ph 8,100
Py 13,500
OTHER PNAs <MDL
Pb 187,000
SB-14
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 7,580
SB-16
11/22/2021
3.0 ~ 4.0'
VOCs <MDL
ACE 800
ACETHY 400
ANT 2,600
B(a)ANTH 7,600
B(a)PYR 6,400
B(b)FLA 12,300
B(g,h,i)PER 2,000
B(k)FLA 13,800
CHRYSENE 7,300
FL 14,600
F 900
I(1,2,3-CD)PY 2,000
NAPH 400
Ph 9,600
Py 18,000
OTHER PNAs <MDL
Pb 61,200
SB-16
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 12,200
SB-17
11/22/2021
3.5 ~ 4.5'
VOCs <MDL
ACE 400
ANT 1,200
B(a)ANTH 3,500
B(a)PYR 3,400
B(b)FLA 6,000
B(g,h,i)PER 1,200
B(k)FLA 6,700
CHRYSENE 3,500
FL 7,400
F 500
I(1,2,3-CD)PY 1,200
Ph 4,300
Py 7,500
OTHER PNAs <MDL
Pb 47,200
SB-17
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 17,600
SB-6
12/18/2013
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
SB-14
12/19/2013
2.5 ~ 3.5'
VOCs <MDL
PNAs <MDL
PCBs <MDL
As 850
Ba 69,800
Cr 3,150
Cu 6,200
Pb 7,120
OTHER METALs <MDL
SB-15
12/19/2013
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
PCBs <MDL
As 1,620
Ba 88,600
Cd 220
Cr 2,840
Cu 7,500
Pb 9,650
OTHER METALs <MDL
SB-7
12/18/2013
3.0 ~ 4.0'
VOCs <MDL
B(a)PYR 3,400
B(b)FLA 6,100
B(k)FLA 6,800
B(g,h,i)PER 1,100
CHRYSENE 3,500
DI(A,H)ANT 400
FL 8,800
F 1,000
I(1,2,3-CD)PY 1,000
NAPH 500
Ph 8,700
Py 9,400
OTHER PNAs <MDL
SB-18
11/22/2021
2.5 ~ 3.5'
VOCs <MDL
ACE 400
ANT 1,200
B(a)ANTH 3,900
B(a)PYR 3,700
B(b)FLA 6,600
B(g,h,i)PER 1,500
B(k)FLA 7,400
CHRYSENE 4,100
FL 8,300
F 400
I(1,2,3-CD)PY 1,400
Ph 5,000
Py 8,800
OTHER PNAs <MDL
Pb 1,290,000
SB-18
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
B(b)FLA 400
B(k)FLA 400
FL 600
Ph 700
Py 600
OTHER PNAs <MDL
Pb 13,700
SB-15
11/22/2021
2.5 ~ 3.5'
VOCs <MDL
B(k)FLA 300
FL 400
Ph 400
Py 400
OTHER PNAs <MDL
Pb 26,700
SB-15
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 8,270
SB-8
12/18/2013
2.0 ~ 3.0'
NAPH 610
OTHER VOCs <MDL
B(a)PYR 8,900
B(b)FLA 15,800
B(k)FLA 17,600
B(g,h,i)PER 2,900
CHRYSENE 9,300
FL 20,900
F 2,600
I(1,2,3-CD)PY 2,900
NAPH 3,000
Ph 18,000
Py 18,500
2-M 1,100
OTHER PNAs <MDL
PCBs <MDL
As 2,880
Ba 83,100
Cd 550
Cr 17,500
Cu 61,200
Pb 690,000
Hg 111
OTHER METALs <MDL
CO-SB-12
12/17/2010
2.0 ~ 4.0'
B(a)PYR 3,700
SB-20
11/22/2021
3.0 ~ 4.0'
VOCs <MDL
ANT 400
B(a)ANTH 1,100
B(a)PYR 1,000
B(b)FLA 1,900
B(g,h,i)PER 400
B(k)FLA 2,100
CHRYSENE 1,100
FL 2,200
I(1,2,3-CD)PY 300
Ph 1,400
Py 2,200
OTHER PNAs <MDL
Pb 857,000
SB-20
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
ACE 1,800
ANT 2,600
B(a)ANTH 4,500
B(a)PYR 4,200
B(b)FLA 7,200
B(g,h,i)PER 2,000
B(k)FLA 8,200
CHRYSENE 4,700
FL 10,500
F 2,100
I(1,2,3-CD)PY 1,900
2-M 1,000
NAPH 3,000
Ph 12,400
Py 9,800
OTHER PNAs <MDL
Pb 375,000
SB-5
12/18/2013
1.0 ~ 2.0'
VOCs <MDL
B(a)PYR 300
B(b)FLA 500
B(k)FLA 600
FL 500
Py 500
OTHER PNAs <MDL
SB-19
11/22/2021
3.0 ~ 4.0'
VOCs <MDL
B(b)FLA 500
B(k)FLA 600
FL 500
Py 600
OTHER PNAs <MDL
Pb 47,400
SB-19
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 11,900
SB-4
12/18/2013
2.5 ~ 3.5'
VOCs <MDL
PNAs <MDL
SB-13
11/22/2021
3.0 ~ 4.0'
2-M 100
OTHER VOCs <MDL
ANT 400
B(a)ANTH 800
B(a)PYR 600
B(b)FLA 1,100
B(k)FLA 1,300
CHRYSENE 800
FL 1,900
Ph 1,600
Py 1,800
OTHER PNAs <MDL
Pb 36,500
SB-13
11/22/2021
4.5 ~ 5.5'
2-M 700
NAPH 500
OTHER VOCs <MDL
PNAs <MDL
Pb 14,400
SB-23
11/22/2021
2.5 ~ 3.5'
2-M 200
OTHER VOCs <MDL
ACE 1,100
ANT 2,600
B(a)ANTH 7,600
B(a)PYR 6,900
B(b)FLA 13,400
B(g,h,i)PER 2,100
B(k)FLA 15,100
CHRYSENE 7,200
DI(A,H)ANT 300
FL 14,200
F 1,400
I(1,2,3-CD)PY 2,200
2-M 500
NAPH 1,000
Ph 12,100
Py 15,100
OTHER PNAs <MDL
Pb 1,530,000
SB-23
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 20,700
SB-21
11/22/2021
2.5 ~ 3.5'
2-M 2,400
NAPH 6,700
OTHER VOCs <MDL
ACE 800
ANT 2,700
B(a)ANTH 4,400
B(a)PYR 3,900
B(b)FLA 7,400
B(g,h,i)PER 1,100
B(k)FLA 8,200
CHRYSENE 4,400
FL 10,000
F 1,100
I(1,2,3-CD)PY 1,100
NAPH 500
Ph 10,000
Py 10,900
OTHER PNAs <MDL
Pb 214,000
SB-21
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 10,000
SB-22
11/22/2021
2.5 ~ 3.5'
VOCs <MDL
B(a)ANTH 900
B(a)PYR 900
B(b)FLA 1,800
B(g,h,i)PER 500
B(k)FLA 2,100
CHRYSENE 1,100
FL 1,800
I(1,2,3-CD)PY 400
Ph 900
Py 1,900
OTHER PNAs <MDL
Pb 751,000
SB-22
11/22/2021
5.0 ~ 6.0'
VOCs <MDL
PNAs <MDL
Pb 10,500
SB-3
12/18/2013
4.0 ~ 5.0'
2-M 1,180
OTHER VOCs <MDL
PNAs <MDL
PCBs <MDL
As 1,410
Ba 81,200
Cd 290
Cr 2,710
Cu 12,100
Pb 13,500
OTHER METALs <MDL
SB-9
12/18/2013
2.0 ~ 3.0'
VOCs <MDL
PNAs <MDL
PCBs <MDL
SB-2
12/18/2013
3.0 ~ 4.0'
VOCs <MDL
B(a)PYR 1,100
B(b)FLA 1,800
B(k)FLA 2,000
B(g,h,i)PER 600
CHRYSENE 1,200
FL 3,200
I(1,2,3-CD)PY 500
Ph 2,400
Py 2,800
OTHER PNAs <MDL
PCBs <MDL
As 1,950
Ba 55,400
Cd 390
Cr 4,890
Cu 20,300
Pb 53,500
Hg 163
OTHER METALs <MDL
SB-1
12/18/2013
1.0 ~ 2.0'
VOCs <MDL
B(a)PYR 600
B(b)FLA 1,100
B(k)FLA 1,200
B(g,h,i)PER 300
CHRYSENE 700
FL 1,400
Ph 700
Py 1,200
OTHER PNAs <MDL
PCBs <MDL
As 2,820
Ba 58,400
Cd 520
Cr 8,710
Cu 16,400
Pb 31,400
Hg 73
OTHER METALs <MDL
SB-1
12/18/2013
8.0 ~ 9.0'
VOCs <MDL
B(a)PYR 1,000
B(b)FLA 1,800
B(k)FLA 2,000
B(g,h,i)PER 400
CHRYSENE 1,000
FL 1,700
I(1,2,3-CD)PY 400
Ph 1,000
Py 1,700
OTHER PNAs <MDL
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
JACKSON AVENUE
NORTH CAMPBELL STREET
SIDEWALK
WESSON STREET
SIDEWALK
4028 WESSON STREET
VACANT LAND
ASPHALT
GRAVEL
3957 NORTH CAMPBELL STEET
GRASS
3951 NORTH CAMPBELL STEET
5800 MICHIGAN AVENUE
GRAVEL
PARKING
AREA
5840 MICHIGAN
AVENUE
VACANT LAND
SIDEWALK
TELE
TELE
SB-14
SB-15
SB-6
SB-5
SB-17
SB-16
SB-14/SG-14
SB-18
SB-19
SB-20/SG-20
SB-8/SG-8
SB-21
SB-4
SB-3
SB-13/SG-13
SB-2
SB-1/SG-1
SB-9/SG-9
CO-SB-12
CO-SB-5
SB-22
CO-SB-6
CO-SB-1
CO-SB-4
CO-SB-3
CO-SB-2
SB-23
SB-7
N
LEGEND:
SUBJECT PROPERTY
APPROXIMATE FORMER/HISTORICAL SITE FEATURES
PARCEL / LOT BOUNDARIES
TELE BURIED PHONE LINE
AKT BORING LOCATION
SOIL BORING
SOIL BORING / SOIL GAS
As ARSENIC
Ba BARIUM
Cd CADMIUM
Cr CHROMIUM
Pb LEAD
Cu COPPER
Hg MERCURY
B(a)PYR BENZO(a)PYRENE
B(b)FLA BENZO(b)FLUORANTHENE
B(g,h,i)PER BENZO(g,h,i)PERYLENE
B(k)FLA BENZO(k)FLUORANTHENE
F FLUORENE
FL FLUORANTHENE
Ph PHENANTHRENE
Py PYRENE
I(1,2,3-CD)PY INDENO(1,2,3,CD)PYRENE
DI(A,H)ANT DIBENZO(a,h)ANTHRACENE
2-M 2-METHYLNAPHTHALENE
NAPH NAPHTHALENE
VOCs VOLATILE ORGANIC COMPOUNDS
PNAs POLYNUCLEAR AROMATIC COMPOUNDS
PCBs POLYCHLORINATED BIPHENYLS
MDL METHOD DETECTION LIMIT
UNITs µg/Kg (UNLESS NOTED)
VALUE EXCEEDS APPLICABLE CRITERIA/RBSL
VALUE EXCEEDS SSVIAC
NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED. ONLY EXCEEDENCES ABOVE APPLICABLE PART 201 RESIDENTIAL CLEANUP CRITERIA ARE IDENTIFIED FOR AKT BORINGS.
PM ENVIRONMENTAL
Environmental & Engineering Services
FIGURE 3
SOIL ANALYTICAL RESULTS
PROJ:
VACANT LAND
5800 MICHIGAN AVENUE AND
3951-39578 CAMPBELL STREET
DETROIT, MI
THIS IS NOT A LEGAL SURVEY
VERIFY SCALE
0 50'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
DRN BY: CS/MM/CS
DATE: 12/14/2021
CHKD BY: KW/JR/JB
SCALE: 1" = 50'
FILE NAME: 01-12749-1-001F03R00

SG-14	
11/23/2021	
5.0'	
UNITS	ug/m³
HEXANE	11
OTHER VOCs	<MDL
ETHANOL	27,000
ISOP ALCOHOL	330
PROPENE	250
OTHER PNAs	<MDL

SG-20	
11/23/2021	
5.0'	
UNITS	ug/m³
ACETONE	120
CARBON DISF	19
CYCLOHEXANE	17
HEPTANE	33
HEXANE	49
OTHER VOCs	<MDL
ETHANOL	12,000
PROPENE	660
OTHER PNAs	<MDL

SG-13	
11/23/2021	
7.5'	
UNITS	ug/m³
ETHANOL	7,300
T	290
OTHER PNAs	<MDL

LEGEND:

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PARCEL / LOT BOUNDARIES
- TELE — BURIED PHONE LINE

- AKT BORING LOCATION
- SOIL BORING
- SOIL BORING / SOIL GAS

T	TOLUENE
CARBON DISF	CARBON DISULFIDE
ISOP ALCOHOL	ISOPROPYL ALCOHOL
VOCs	VOLATILE ORGANIC COMPOUNDS
PNAs	POLYNUCLEAR AROMATIC COMPOUNDS
MDL	METHOD DETECTION LIMIT
UNITs	µg/m³ (UNLESS NOTED)

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED.

PM ENVIRONMENTAL | Environmental & Engineering Services

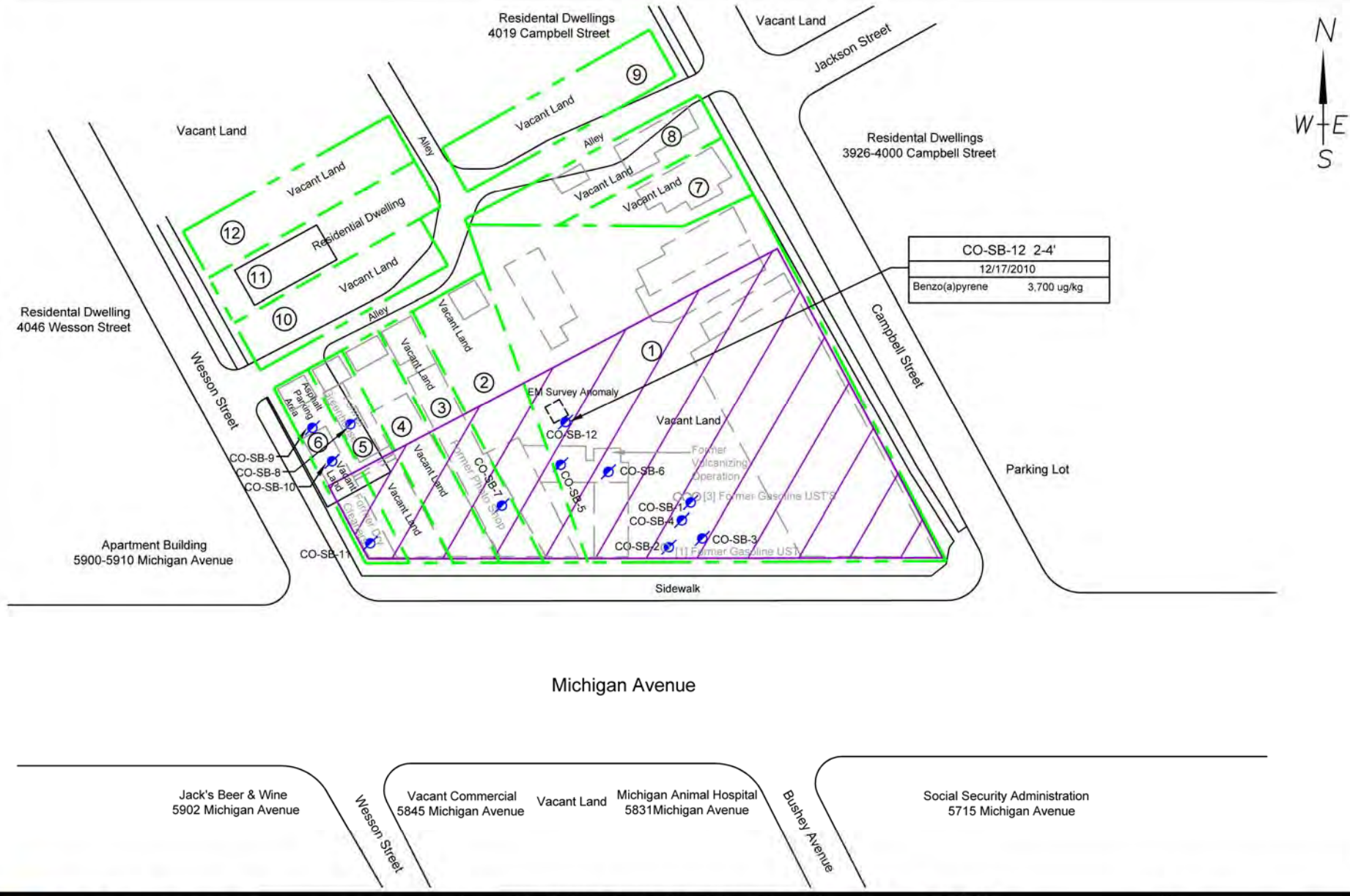
FIGURE 4
SOIL GAS ANALYTICAL RESULTS

PROJ:
VACANT LAND
5800 MICHIGAN AVENUE AND
3951-39578 CAMPBELL STREET
DETROIT, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 50'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: CS/MM/CS
CHKD BY: KW/JR/JB
DATE: 12/14/2021
SCALE: 1" = 50'
FILE NAME: 01-12749-1-001F04R00



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CHICAGO DETROIT FARMINGTON LANSING SAGINAW
www.aktpeerless.com

SITE MAP WITH SOIL RESULTS EXCEEDING MDNRE GRCC
CHILDREN'S OUTREACH
5800 MICHIGAN AVENUE
DETROIT, MICHIGAN
PROJECT NUMBER : 6861F-1-20

LEGEND
= PROPERTY LINE
= PARCEL LINE
= SOIL BORING
= GEOPHYSICAL SURVEY AREA
= FORMER STRUCTURE

DRAWN BY: JWB
DATE: 1/11/2011
0 40 80
SCALE: 1" = 80'±0

FIGURE 3

AKTPEERLESS environmental services

Table 1
Summary of Soil Analytical Results
Children's Outreach
5800-5864 Michigan Avenue, 4028-4044 Wesson Avenue, and 3951-4007 Campbell Avenue
Detroit, Michigan
AKT Peerless Project No. 6861F-1-20

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#18	#19	#20							
Parameters*	**Chemical Abstract Service Number**	**Statewide Default Background Levels**	**Residential and Commercial I Drinking Water Protection Criteria and RBSLs**	**Groundwater Surface Water Interface Protection Criteria and RBSLs**	**Groundwater Contact Protection Criteria and RBSLs**	**Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs**	**Infinite Source Volatile Soil Inhalation Criteria (VSIC) and RBSLs**	**Particulate Soil Inhalation Criteria and RBSLs**	**Direct Contact Criteria and RBSLs**	**Soil Saturation Concentration Screening Levels**	Sample Location	CO-SB-1	CO-SB-1	CO-SB-2	CO-SB-2	CO-SB-3	CO-SB-3	CO-SB-4
**(Refer to detailed laboratory report for method reference data)*											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	4-6	10-12	4-6	10-12	1-3	4-6	2-4
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Metals																		
Cadmium (B)	7440-43-9	1,200	6,000	(G,X)	2.3E+8	NLV	NLV	1.7E+6	5.5E+5	NA		210	<200	<200	<200	340	<200	420
Chromium, Total	7440-47-3	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	2.6E+5	2.5E+6	NA		2,310	3,260	3,030	3,860	3,450	2,730	3,570
Lead (B)	7439-92-1	21,000	7.0E+5	(G,X)	ID	NLV	NLV	1.0E+8	4.0E+5	NA		12,900	4,850	8,750	5,430	27,400	6,280	12,100
Semivolatiles, PNAs																		
Acenaphthene	83-32-9	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	1.4E+10	4.1E+7	NA		<300	<300	<300	<300	<300	<300	<300
Acenaphthylene	208-96-8	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.3E+9	1.6E+6	NA		<300	<300	<300	<300	<300	<300	<300
Anthracene	120-12-7	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	6.7E+10	2.3E+8	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLL	NLV	NLV	1.5E+6	2,000	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	NLL	ID	ID	ID	20,000	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLL	NLV	NLV	8.0E+8	2.5E+6	NA		<300	<300	<300	<300	<300	<300	<300
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLL	NLV	NLV	ID	2.0E+5	NA		<300	<300	<300	<300	<300	<300	<300
Chrysene (Q)	218-01-9	NA	NLL	NLL	NLL	ID	ID	ID	2.0E+6	NA		<300	<300	<300	<300	<300	<300	<300
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLL	NLV	NLV	ID	2,000	NA		<300	<300	<300	<300	<300	<300	<300
Fluoranthene	206-44-0	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	9.3E+9	4.6E+7	NA		<300	<300	<300	<300	500	<300	<300
Fluorene	86-73-7	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	9.3E+9	2.7E+7	NA		<300	<300	<300	<300	<300	<300	<300
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		<300	<300	<300	<300	<300	<300	<300
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		<300	<300	<300	<300	<300	<300	<300
Naphthalene	91-20-3	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		<300	<300	<300	<300	<300	<300	<300
Phenanthrene	85-01-8	NA	56,000	5,300	1.1E+6	2.8E+6	1.6E+5	6.7E+6	1.6E+6	NA		<300	<300	<300	<300	<300	<300	<300
Pyrene	129-00-0	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.7E+9	2.9E+7	NA		<300	<300	<300	<300	400	<300	<300
Volatiles																		
Acrylonitrile (I)	107-13-1	NA	100 (M); 52	100 (M,X); 98	2.8E+5	6,600	5,000	4.6E+7	16,000	8.3E+6		<200	<200	<200	<200	<200	<200	<100
Bromomethane	74-83-9	NA	200	700	1.4E+6	860	11,000	3.3E+8	3.2E+5	2.2E+6		<300	<300	<300	<300	<400	<300	<300
sec-Butylbenzene	135-98-8	NA	1,600	ID	88,000	ID	ID	ID	2.5E+6	1.0E+7		110	<90	<80	<90	<90	<80	<70
1,3-Dichlorobenzene	541-73-1	NA	170	1,100	51,000	ID	ID	ID	1.7E+5 (C)	1.7E+5		<200	<200	<200	<200	<200	<200	<100
Ethylene dibromide	106-93-4	NA	20 (M); 1.0	20 (M); 4.0	500	670	1,700	1.4E+7	92	8.9E+5		<30	<30	<30	<30	<40	<30	<30
Methylene chloride	75-09-2	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	6.6E+9	1.3E+6	2.3E+6		<200	<200	<200	<200	<200	<200	<100
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	3.9E+11	2.9E+6	1.2E+8		<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<1,000
1,1,2-Trichloroethane	79-00-5	NA	100	6,600 (X)	4.2E+5	4,600	17,000	1.9E+8	1.8E+5	9.2E+5		<600	<90	<220	<90	<90	<80	<70
Vinyl chloride	75-01-4	NA	40	300	20,000	270	4,200	3.5E+8	3,800	4.9E+5		<80	<90	<80	<90	<90	<80	<70
Xylenes (I)	1330-20-7	NA	5,600	700	1.5E+5 (C)	1.5E+5 (C)	4.6E+7	2.9E+11	1.5E+5 (C)	1.5E+5		<280	<290	<280	<290	<290	<280	<170
Remaining VOCs	varies	NA	-	-	-	-	-	-	-	-		BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Petroleum Hydrocarbons																		
TPH GRO (C6-C10)		NA	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05	5.5E+05		34,000	NS	25,000	NS	NS	NS	NS
TPH DRO (C10-C28)		NA	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06	1.0E+06		6.1E+05	NS	9,000	NS	NS	NS	NS

AKT PEERLESS environmental services

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Guidesheet Number →		#10	#11	#12	#13	#14	#15	#18	#19	#20								
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											Collection Date	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010
											Depth (feet)	2-4	4-6	2-4	4-6	1-3	4-6	1-3
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Metals																		
Arsenic	7440-38-2	5,800	4,600	70,000 (X)	2.0E+6	NLV	NLV	7.2E+5	7,600	NA		1,240	NS	NS	NS	2,480	3,060	NS
Barium (B)	7440-39-3	75,000	1.3E+6	(G,X)	1.0E+9 (D)	NLV	NLV	3.3E+8	3.7E+7	NA		53,800	NS	NS	NS	52,500	50,200	NS
Cadmium (B)	7440-43-9	1,200	6,000	(G,X)	2.3E+8	NLV	NLV	1.7E+6	5.5E+5	NA		210	NS	NS	NS	320	330	NS
Chromium, Total	7440-47-3	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	2.6E+5	2.5E+6	NA		2,790	NS	NS	NS	4,390	17,800	NS
Copper (B)	7440-50-8	32,000	5.8E+6	(G)	1.0E+9 (D)	NLV	NLV	1.3E+8	2.0E+7	NA		8,100	NS	NS	NS	18,500	15,400	NS
Lead (B)	7439-92-1	21,000	7.0E+5	(G,X)	ID	NLV	NLV	1.0E+8	4.0E+5	NA		15,900	NS	NS	NS	71,700	46,200	NS
Mercury, Total	7439-97-6	130	1,700	50 (M); 1.2	47,000	48,000	52,000	2.0E+7	1.6E+5	NA		<50	NS	NS	NS	210	<50	NS
Selenium (B)	7782-49-2	410	4,000	400	7.8E+7	NLV	NLV	1.3E+8	2.6E+6	NA		<500	NS	NS	NS	<500	<500	NS
Silver (B)	7440-22-4	1,000	4,500	100 (M); 27	2.0E+8	NLV	NLV	6.7E+6	2.5E+6	NA		<200	NS	NS	NS	<200	<200	NS
Zinc (B)	7440-66-6	47,000	2.4E+6	(G)	1.0E+9 (D)	NLV	NLV	ID	1.7E+8	NA		24,100	NS	NS	NS	61,000	55,000	NS
Pesticides																		
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	2.4E+6	NLV	NLV	6.7E+9	2.5E+6	NA		NS	NS	NS	NS	NS	NS	<240
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	3.1E+6	NLV	NLV	ID	1.7E+6	NA		NS	NS	NS	NS	NS	NS	<240
Pesticides, Chlorinated																		
Aldrin	309-00-2	NA	NLL	NLL	NLL	1.3E+6	58,000	6.4E+5	1,000	NA		NS	NS	NS	NS	NS	NS	<20
Chlordane (J)	57-74-9	NA	NLL	NLL	NLL	1.1E+7	1.2E+6	3.1E+7	31,000	NA		NS	NS	NS	NS	NS	NS	<20
4-4'-DDD	72-54-8	NA	NLL	NLL	NLL	NLV	NLV	4.4E+7	95,000	NA		NS	NS	NS	NS	NS	NS	<20
4-4'-DDE	72-55-9	NA	NLL	NLL	NLL	NLV	NLV	3.2E+7	45,000	NA		NS	NS	NS	NS	NS	NS	<20
4-4'-DDT	50-29-3	NA	NLL	NLL	NLL	NLV	NLV	3.2E+7	57,000	NA		NS	NS	NS	NS	NS	NS	<20
Dieldrin	60-57-1	NA	NLL	NLL	NLL	1.4E+5	19,000	6.8E+5	1,100	NA		NS	NS	NS	NS	NS	NS	<20
Endrin	72-20-8	NA	NLL	NLL	NLL	NLV	NLV	ID	65,000	NA		NS	NS	NS	NS	NS	NS	<20
Heptachlor	76-44-8	NA	NLL	NLL	NLL	3.5E+5	62,000	2.4E+6	5,600	NA		NS	NS	NS	NS	NS	NS	<20
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLL	NLV	NLV	1.2E+6	3,100	NA		NS	NS	NS	NS	NS	NS	<20
alpha-Hexachlorocyclohexane	319-84-6	NA	18	NA	2,500	30,000	12,000	1.7E+6	2,600	NA		NS	NS	NS	NS	NS	NS	<20
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	5,100	NLV	NLV	5.9E+6	5,400	NA		NS	NS	NS	NS	NS	NS	<20
Lindane	58-89-9	NA	20 (M); 7.0	20 (M); 0.99	7,100	ID	ID	ID	8,300	NA		NS	NS	NS	NS	NS	NS	<20
Methoxychlor	72-43-5	NA	16,000	NA	18,000	ID	ID	ID	1.9E+6	NA		NS	NS	NS	NS	NS	NS	<50

AKTPEERLESS environmental services

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											Collection Date	12/17/2010	12/17/2010
											Depth (feet)	13-15	2-4
		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg
Semivolatiles, PNAs													
Acenaphthene	83-32-9	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	1.4E+10	4.1E+7	NA		NS	500
Acenaphthylene	208-96-8	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.3E+9	1.6E+6	NA		NS	400
Anthracene	120-12-7	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	6.7E+10	2.3E+8	NA		NS	1,600
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		NS	4,200
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLL	NLV	NLV	1.5E+6	**2,000**	NA		NS	**3,700**
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	NLL	ID	ID	ID	20,000	NA		NS	3,700
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLL	NLV	NLV	8.0E+8	2.5E+6	NA		NS	1,000
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLL	NLV	NLV	ID	2.0E+5	NA		NS	3,600
Chrysene (Q)	218-01-9	NA	NLL	NLL	NLL	ID	ID	ID	2.0E+6	NA		NS	4,200
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLL	NLV	NLV	ID	2,000	NA		NS	<300
Fluoranthene	206-44-0	NA	7.3E+5	**5,500**	7.3E+5	1.0E+9 (D)	7.4E+8	9.3E+9	4.6E+7	NA		NS	**8,600**
Fluorene	86-73-7	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	9.3E+9	2.7E+7	NA		NS	700
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLL	NLV	NLV	ID	20,000	NA		NS	1,000
2-Methylnaphthalene	91-57-6	NA	57,000	ID	5.5E+6	ID	ID	ID	8.1E+6	NA		NS	<300
Naphthalene	91-20-3	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	2.0E+8	1.6E+7	NA		NS	<300
Phenanthrene	85-01-8	NA	56,000	**5,300**	1.1E+6	2.8E+6	1.6E+5	6.7E+6	1.6E+6	NA		NS	**6,500**
Pyrene	129-00-0	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.7E+9	2.9E+7	NA		NS	8,000
Volatiles													
Acrylonitrile (I)	107-13-1	NA	100 (M); 52	100 (M,X); 98	2.8E+5	6,600	5,000	4.6E+7	16,000	8.3E+6		<200	<200
1,3-Dichlorobenzene	541-73-1	NA	170	1,100	51,000	ID	ID	ID	1.7E+5 (C)	1.7E+5		<200	<200
Ethylene dibromide	106-93-4	NA	20 (M); 1.0	20 (M); 4.0	500	670	1,700	1.4E+7	92	8.9E+5		<40	<30
Methylene chloride	75-09-2	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	6.6E+9	1.3E+6	2.3E+6		<200	<200
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	3.9E+11	2.9E+6	1.2E+8		<2,000	<2,000
Vinyl chloride	75-01-4	NA	40	300	20,000	270	4,200	3.5E+8	3,800	4.9E+5		<90	<80
Remaining VOCs	varies	-	-	-	-	-	-	-	-	-		BDL	BDL

Appendix B

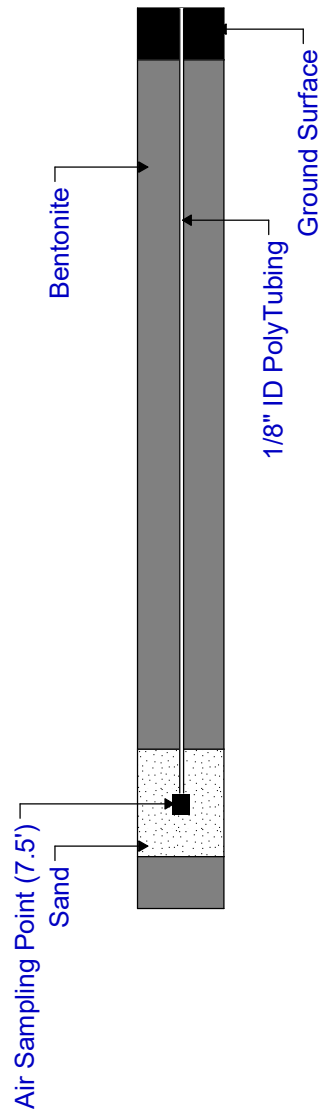
PM ENVIRONMENTAL Environmental & Engineering Services

Well Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Well No.: SB/TSG-13
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)
		Ground Surface			
0		***TOP SOIL***		90	0.0
		SW- (Loose) SAND (moist) Brown, fine to medium., trace gravel			
		CONCRETE DEBRIS		90	0.0
2		***SW- (Loose) SAND (saturated)*** Brown, fine to medium., trace gravel		90	0.0
		CL- (Medium Stiff) CLAY (damp) Gray, low plasticity, trace gravel, trace sand	SB-13 3.0-4.0'	90	0.0
4		***CL- (Stiff) CLAY (damp)*** Dark Brown, low plasticity, trace gravel, trace sand, concrete/brick/asphalt debris	SB-13 4.5-5.5'	90	0.0
				90	0.0
6		***CL- (Medium Stiff) CLAY (damp)*** Brown, low plasticity, trace gravel		90	0.0
				90	0.0
8				90	0.0
				90	0.0
10					



Completion Notes: EOB @ 10'

Legend:

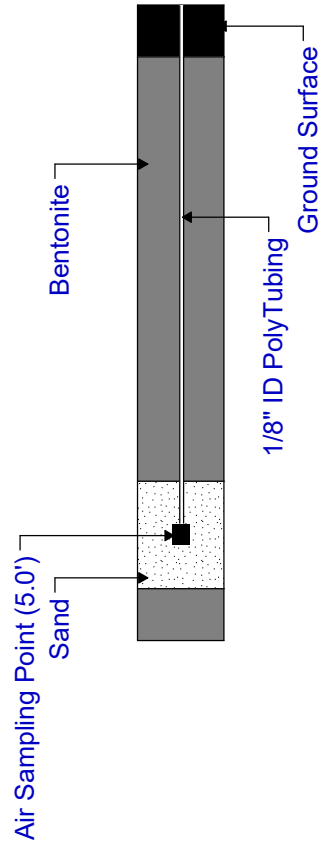
EOB	End of Boring
bgs	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet
in	Inches

Well Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Well No.: SB/TSG-14
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)
0		Ground Surface			
		TOP SOIL		90	0.0
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		90	0.0
2				90	0.0
			SB-14 3.0-4.0'	90	0.0
4		***CL- (Medium Stiff) CLAY (damp)*** Dark Brown, medium plasticity, trace gravel, trace sand, asphalt debris		90	0.0
		CL- (Medium Stiff) CLAY (damp) Brown, medium plasticity, trace gravel	SB-14 5.0-6.0'	90	0.0
6				90	0.0
				90	0.0
8				90	0.0
				90	0.0
10					



Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
bgs	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet
in	Inches

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-15
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		75	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		75	0.0	
2				75	0.0	
			SB-15 2.5-3.5'	75	0.0	
		CL- (Stiff) CLAY (damp) Dark Brown, medium plasticity, trace gravel, trace sand, concrete/brick/asphalt debris		75	0.0	
4						
		CL- (Medium Stiff) CLAY (damp) Brown, high plasticity, trace gravel	SB-15 5.0-6.0'	90	0.0	
6				90	0.0	
				90	0.0	
8				90	0.0	
				90	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-16
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		80	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		80	0.0	
2				80	0.0	
			SB-16 3.0-4.0'	80	0.0	
4		***CL- (Stiff) CLAY (damp)*** Dark Brown, medium plasticity, trace gravel, trace sand, concrete/brick/asphalt debris		80	0.0	
		CL- (Medium Stiff) CLAY (damp) Brown, medium plasticity, trace gravel	SB-16 5.0-6.0'	80	0.0	
6				80	0.0	
		CL- (Soft) CLAY (damp) Brown, high plasticity, trace gravel		80	0.0	
8				80	0.0	
				80	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-17
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***				
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		75	0.0	
				75	0.0	
2				75	0.0	
			SB-17	75	0.0	
4		***CL- (Stiff) CLAY (damp)*** Dark Brown, low plasticity, trace gravel, trace sand, concrete/brick/asphalt debris	3.5-4.5'	75	0.0	
		CL- (Medium Stiff) CLAY (damp) Brown, low plasticity, trace gravel	SB-17 5.0-6.0'	90	0.0	
6				90	0.0	
		CL- (Soft) CLAY (damp) Brown, high plasticity, trace gravel		90	0.0	
8				90	0.0	
				90	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-18
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		90	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		90	0.0	
2				90	0.0	
			SB-18			
		CL- (Stiff) CLAY (damp) Dark Brown, low plasticity, trace gravel, trace sand, concrete/asphalt debris	2.5-3.5'	90	0.0	
4		***CL- (Soft) CLAY (damp)*** Brown, medium plasticity, trace gravel		90	0.0	
			SB-18	90	0.0	
			5.0-6.0'			
6				90	0.0	
				90	0.0	
8				90	0.0	
				90	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-19
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		85	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		85	0.0	
2				85	0.0	
			SB-19 3.0-4.0'	85	0.0	
4		***CL- (Stiff) CLAY (damp)*** Dark Brown, low plasticity, trace gravel, trace sand, concrete/brick/asphalt debris		85	0.0	
		CL- (Stiff) CLAY (damp) Brown, low plasticity, trace gravel	SB-19 5.0-6.0'	85	0.0	
6		***CL- (Soft) CLAY (damp)*** Brown, medium plasticity, trace gravel		85	0.0	
				85	0.0	
8				85	0.0	
				85	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

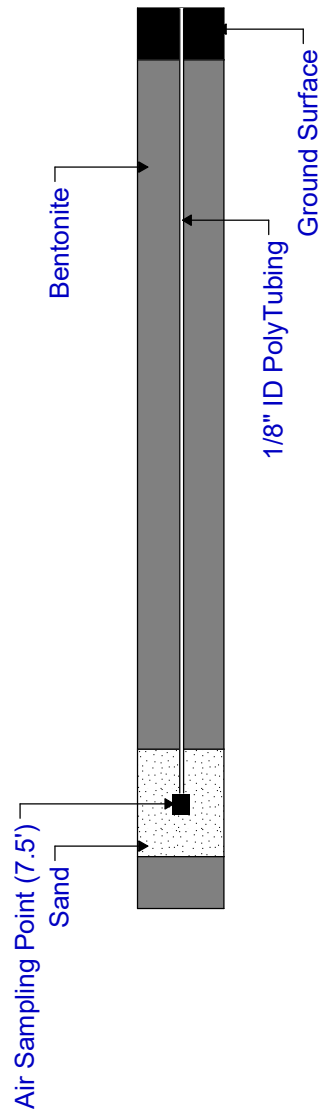
EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Well Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Well No.: SB/TSG-20
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)
0		Ground Surface			
		TOP SOIL		75	0.1
		SW- (Loose) SAND (moist) Brown, fine to medium., trace gravel		75	0.1
2				75	0.1
			SB-20	75	0.8
4		**CL- (Stiff) CLAY (damp)** Dark Brown, medium plasticity, trace gravel, trace sand, concrete/brick/asphalt debris	3.0-4.0'		
		CL- (Medium Stiff) CLAY (damp) Dark Brown/Brown, medium plasticity, trace gravel		75	0.1
			SB-20	75	0.1
6			5.0-6.0'	75	0.1
				75	0.1
8		**CL- (Stiff) CLAY (damp)** Brown, medium plasticity, trace gravel		75	0.1
				75	0.1
10					



Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
bgs	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet
in	Inches

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-21
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		80	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		80	0.0	
2				80	0.0	
			SB-21 2.5-3.5'			
		CL- (Stiff) CLAY (damp) Dark Brown, low plasticity, trace gravel, trace sand, concrete/asphalt debris		80	0.0	
4		***CL- (Stiff) CLAY (damp)*** Gray, low plasticity, trace gravel, trace sand		80	0.0	
		CL- (Soft) CLAY (damp) GRay/Brown, high plasticity, trace gravel	SB-21 5.0-6.0'	90	0.0	
6				90	0.0	
				90	0.0	
8				90	0.0	
				90	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-22
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

SUBSURFACE PROFILE			SAMPLE			
Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		75	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		75	0.0	
2				75	0.0	
			SB-22 2.5-3.5'			
		CL- (Medium Stiff) CLAY (damp) Dark Brown, medium plasticity, trace gravel, trace sand, brick/asphalt debris		75	0.0	
4		***CL- (Soft) CLAY (damp)*** Brown, high plasticity, trace gravel		75	0.0	
			SB-22 5.0-6.0'	75	0.0	
6				75	0.0	
				75	0.0	
8				75	0.0	
				75	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

Boring Log

Project No.: 01-12749-1-001
Project Name: Vacant Land
Address: 5800 Michigan Avenue, Detroit, MI
Facility ID#:
Date Drilled: 11/22/21
Logged By: H. Iglewski

Boring No.: SB-23
Drill Rig: 6712 DT
Drilling Method: Direct Push
Sampling Method: Grab
Drilling Contractor: PM

Depth (ft)	Soil Type Graphic	Description and Comments	Sample Interval	% Recovery	PID (ppm)	No Well Installed
		Ground Surface				
0		***TOP SOIL***		100	0.0	
		SW- (Loose) SAND (damp) Brown, fine to medium., trace gravel		100	0.0	
2				100	0.0	
			SB-23			
		CL- (Stiff) CLAY (damp) Dark Brown, medium plasticity, trace gravel, trace sand, concrete/brick/asphalt debris	2.5-3.5'	100	0.0	
4		***CL- (Medium Stiff) CLAY (damp)*** Brown, high plasticity, trace gravel		100	0.0	
			SB-23	100	0.0	
6			5.0-6.0'	100	0.0	
				100	0.0	
8		***CL- (Stiff) CLAY (damp)*** Brown, high plasticity, trace gravel		100	0.0	
				100	0.0	
10						

Completion Notes: EOB @ 10'

Legend:

EOB	End of Boring
Bgs.	Below Ground Surface
NR	No Recovery
NA	Not Applicable
ft	Feet

McDowell & Associates

Geotechnical, Environmental & Hydrogeological Services • Materials Testing & Inspection

21355 Hatcher Avenue, Ferndale, MI 48220

Phone: (248) 399-2066 • Fax: (248) 399-2157

August 12, 2022

5800 LDHA LP

c/o

Southwest Housing Solutions Corporation
1920 25th Street; Suite A
Detroit, Michigan 48216

Job No. 22-16296

Attention: Ms. Janay Eisenmenger

Subject: Subsurface Investigation
Proposed Mixed-Use Developments
5800- 5862 Michigan Avenue; 3951-3957 Campbell Street;
and 4028-4044 Wesson Avenue
Detroit, Wayne County, Michigan

Dear Ms. Eisenmenger,

Pursuant to your request, McDowell & Associates has completed a Subsurface Investigation for the subject property. A Site Location Map, which shows the approximate location of the subject property, accompanies this report as Attachment I.

Portions of the subject property have been identified as a "facility" based on polynuclear aromatic hydrocarbons (PNAs), tetrachloroethene, and metals in soil above EGLE Generic Residential Criteria and Site-Specific Volatilization to Indoor Air Criteria (SSVIAC).

The scope of work for this Subsurface Investigation was developed to investigate former residential and commercial areas on the property and to attempt to define the extent of elevated lead on the property.

As part of this assessment, a total of 12 test pits and 25 soil borings were made on the subject property. A total of 48 soil samples were obtained and submitted for chemical testing to determine the presence of some or all of the following: volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PNAs), lead, and mercury.

Results of chemical testing showed elevated VOCs, PNAs, lead, and mercury in fill soil on the property at concentrations above relevant EGLE Generic Residential Criteria. Results of toxicity characteristic leaching procedure (TCLP) testing for lead showed the lead would not be considered a RCRA Characteristic Hazardous Waste. Remedial activities would be required to allow unrestricted residential redevelopment of the property.

This assessment was completed for the exclusive use of 5800 LDHA LP and Southwest Housing Solutions Corporation, and each may rely on this report and its contents.

The results of our investigation are presented below.

Background

McDowell & Associates has been provided or obtained the following reports for the subject property:

Title	Author	Date	Property	Relevant Information
Phase I ESA (text and site map only)	AEMG	11/1/2010	Subject property	Eight RECs identified on that property.
Phase II ESA	AKT Peerless	1/7/2011	Subject property and adjoining land to the north	Geophysical completed. 12 borings made on the SP. 22 soil samples submitted for chemical testing.
Phase I ESA	PME	11/22/2013	Subject property and adjoining land to the north	Two RECs identified on that property.
Phase II ESA*	PME	3/31/2014	Subject property	Geophysical completed. Nine borings made on the SP. Ten soil samples and three soil gas samples submitted for chemical testing.
BEA	PME	3/31/2014	East portion of subject property at 5800 Michigan Avenue.	That property identified as a "facility" based on benzo(a)pyrene and lead in soil above EGLE Generic Residential Direct Contact Criteria.
BEA	PME	3/31/2014	West portion of subject property at 5862 Michigan Avenue.	That property identified as a "facility" based on tetrachloroethene and benzo(a)pyrene in soil above EGLE Generic Residential Direct Contact Criteria.
Phase I ESA	PME	1/15/2021	West portion of subject property	One REC identified.
Phase II ESA	PME	3/25/2022	West portion of subject property	11 soil borings made on the SP and three soil gas points installed. 22 soil samples and 3 soil gas samples submitted for testing.

Title	Author	Date	Property	Relevant Information
Phase I ESA	PME	6/30/2022	West portion of subject property	Summarized reports referenced above. One REC identified. Refer below.

SP- subject property
REC- recognized environmental condition
AEMG- Advanced Environmental Management Group (AEMG)
PME- PM Environmental, Inc.
*not provided. Select information related to 5800 Michigan Avenue included in the 2014 BEA

Based on review of the above-referenced reports, subject property have been identified as a "facility" based on polynuclear aromatic hydrocarbons (PNAs), tetrachloroethene, and metals in soil above EGLE Generic Residential Criteria and Site-Specific Volatilization to Indoor Air Criteria (SSVIAC).

The scope of work for this Subsurface Investigation was developed to investigate former residential and commercial areas on the property and to attempt to define the extent of elevated lead on the property.

Field Work

As part of this investigation, McDowell & Associates completed the following at the subject property:

- July 14, 2022- Twelve test pits, designated TP-1 through TP-12, were made. A total of 23 soil samples were obtained and submitted for chemical testing.
- July 21, 2022- Twenty-five soil borings, designated 101 through 125, were made. A total of 25 soil samples were obtained and submitted for chemical testing.

A Soil Boring and Test Pit Location Map, which shows the approximate locations in which soil borings and test pits were made, accompanies this report as Attachment II.

Subsurface conditions encountered in soil borings and test pits made on the subject property generally consisted of clay and sand fill with varying amounts of brick, concrete, glass, and metal to depths ranging between 2'8" and 11'0" below ground surface (bgs) underlain by moist variegated and brown silty clay. No groundwater was encountered in any of the soil borings or test pits made on the subject property.

Test pit and soil boring spoils were field screened with a MiniRAE photoionization detector (PID) to estimate the presence of volatile organic compound (VOC) vapors. PID readings were detected in Soil Boring 103 at concentrations peaking at 3.0 ppm (parts per million, calibrated to isobutylene gas).

The following table summarizes test pits and soil borings made on the subject property by McDowell & Associates:

Test Pit/ Soil Boring	Total depth	Depth of fill	Fill conditions	PID readings	Samples
TP-1	5'6"	5'	Clay with asphalt, concrete, wood	None	1a: 0'- 1'

Test Pit/ Soil Boring	Total depth	Depth of fill	Fill conditions	PID readings	Samples
TP-2	5’6”	4’3”	Clay with brick, glass, concrete	None	2a: 0’- 1’ 2b: 2’- 3’
TP-3	7’10”	6’3”	Clay with brick, metal, concrete	None	3b: 2’6”- 3’ 3c: 3’6”- 4’ 3e: 4’6”- 5’
TP-4	4’6”	4’	Clay with brick, concrete, glass	None	4b: 3’- 3’6”
TP-5	5’	3’	Sand with brick, concrete, debris, trash, glass, asphalt	None	5a: 1’- 2’ 5b: 3’- 4’
TP-6	5’	3’5”	Clay with brick, concrete, debris, wire, plaster	None	6a: 2’- 3’ 6b: 3’6”- 4’6”
TP-7	7’10”	7’10”	Clay with brick, debris, concrete, rubble, termination at concrete slab.	None	7b: 3’- 4’ 7c: 5’- 6’ 7e: 7’- 7’10”
TP-8	6’0”	5’	Clay and sand with brick, concrete, wood	None	8b: 3’- 4’
TP-9	6’0”	5’8”	Sand and clay with concrete, brick, debris, rubble	None	9b: 3’- 4’ 9c: 5’8”- 6’
TP-10	6’	5’	Sand and clay with brick, glass, debris	None	10a: 0’- 1’ 10b: 3’- 4’
TP-11	8’	3’	Sand and clay with brick, concrete	None	11a: 6”- 1’6” 11b: 2’- 3’
TP-12	7’6”	4’	Clay and sand with brick, rubble	None	12b: 3’6”- 4’ 12c: 5’- 6’
101	8’	5’	Clay with concrete, glass, brick	None	NS
102	8’	4’6”	Brown sand (6”- 2’) Black coarse sand (2’- 2’6”) Clay with topsoil	None	102a: 1’- 2’ 102b: 2’- 2’6”
103	12’	4’6”	Brown sand (6”- 2’) Black coarse sand (2’- 2’6”) Clay with trace concrete	3.0 (5’- 6’) 1.5 (8’- 9’)	103d: 5’- 6’
104	8’	4’6”	Brown sand (6”- 2’) Clay with glass, asphalt, concrete	None	104a: 1’- 2’ 104b: 2’- 3’
105	8’	3’6”	Sand and topsoil	None	NS
106	12’	8’	Brown sand (6”- 2’) Black sand with brick, concrete, glass	None	NS
107	4’	2’8”	Brown sand (3”- 2’) Sand and clay with possible glass	None	107a: 0’- 1’ 107b: 2’- 2’6” 107c: 3’- 3’6”
108	4’	3’6”	Brown sand (3”- 3’) Black sand and gravel	None	108a: 1’- 2’ 108b: 3’- 3’6”

Test Pit/ Soil Boring	Total depth	Depth of fill	Fill conditions	PID readings	Samples
109	8’	3’6”	Brown sand (3”- 2’6”) Black clay with brick	None	NS
110	4’	3’	Brown sand (3”- 2’6”) Black clay with glass	None	NS
111	8’	3’9”	Brown sand (1’- 2’) Sand with concrete, brick, glass	None	111c: 2’- 3’
112	4’	3’6”	Brown sand (3”- 2’) Black sand with gravel (2’- 3’) Dark brown clay	None	112a: 1’- 2’
113	4’	3’	Brown sand (3”- 2’6”) Black sand with brick, concrete	None	113a: 1’- 2’
114	4’	3’6”	Sand and clay (1”- 2’) Black sand with glass	None	114c: 2’- 3’
115	4’	3’6”	Brown sand (0’- 2’) Black clay with brick	None	NS
116	4’	3’6”	Brown sand (0’- 2’) Black sand with glass	None	116b: 2’- 3’ 116c: 3’6”- 4’
117	8’	4’6”	Brown sand (1’- 3’) Black sand with brick, glass	None	117b: 1’- 2’ 117c: 3’- 4’ 117d: 4’6”- 5’6”
118	8’	7’6”	Brown sand (6”- 3’) Black clay with brick	None	118d: 6’- 7’
119	8’	6’6”	Brown sand (1’6”- 2’6”) Black clay with brick, glass	None	119c: 4’- 5’
120	8’	6’6”	Sand and clay with brick	None	NS
121	8’	6’	Clay with concrete, metal, roots Concrete slab (3’9”- 4’0”)	None	NS
122	12’	11’	Brown sand (1’6”- 3’6”) Black sand with metal (3’6”- 5’) Clay	None	122c: 3’6”- 4’6”
123	8’	5’	Brown sand (1’6”- 3’6”) Black sand with metal, glass	None	123c: 3’6”- 4’6”
124	8’	4’6”	Brown sand (1’6”- 3’6”) Black clay with metal	None	124c: 3’6”- 4’6”
125	8’	3’6”	Clay with concrete, carpet, brick	None	125b: 4’- 5’

NS- no samples submitted for chemical testing.

Soil samples obtained as part of this assessment were placed in labeled, pre-cleaned jars and stored in an ice-chest until delivery to a representative of Merit Laboratories, Inc. of East Lansing, Michigan for chemical testing. Sample chain-of-custody documentation accompanies this report with chemical test results.

Chemical Testing Program

Soil samples were subjected to tests to determine the presence of the following:

Sample ID	Date	Depth	Soil Type	Testing Program
1a	7/15/2022	0’- 1’	Clay fill clay	VOC, PNA, mercury, lead
2a	7/15/2022	0’- 1’	Clay fill with debris	PNA, mercury, lead
2b	7/15/2022	2’- 3’	Clay fill	VOC, PNA, mercury, lead
3b	7/15/2022	2’6”- 3’	Clay fill with debris	VOC, PNA, mercury, lead
3c	7/15/2022	3’6”- 4’	Clay fill with debris	VOC, PNA, mercury, lead
3e*	7/15/2022	4’6”- 5’	Clay fill with debris	VOC, PNA, mercury, lead
4b	7/15/2022	3’- 3’6”	Clay fill with debris	VOC, PNA, mercury, lead
5a	7/15/2022	1’- 2’	Sand fill with debris	VOC, PNA, mercury, lead
5b	7/15/2022	3’- 4’	Native clay	VOC, PNA, mercury, lead
6a	7/15/2022	2’- 3’	Clay fill with debris	VOC, PNA, mercury, lead
6b	7/15/2022	3’6”- 4’6”	Native clay	VOC, PNA, mercury, lead
7b	7/15/2022	3’- 4’	Clay fill with debris	VOC, PNA, mercury, lead
7c	7/15/2022	5’- 6’	Rubble fill	VOC, PNA, mercury, lead
7e	7/15/2022	7’- 7’10”	Clay fill with debris	VOC, PNA, mercury, lead
8b	7/15/2022	3’- 4’	Clay fill with debris	VOC, PNA, mercury, lead
9b*	7/15/2022	3’- 4’	Clay fill with debris	VOC, PNA, mercury, lead
9c	7/15/2022	5’8”- 6’	Native clay	VOC, PNA, mercury, lead
10a	7/15/2022	0’- 1’	Sand fill with debris	Mercury, lead
10b	7/15/2022	3’- 4’	Clay fill with debris	VOC, PNA, mercury, lead
11a*	7/15/2022	6”- 1’6”	Sand fill with debris	Mercury, lead
11b	7/15/2022	2’- 3’	Clay fill with debris	VOC, PNA, mercury, lead
12b	7/15/2022	3’6”- 4’	Sand fill	VOC, PNA, mercury, lead
12c	7/15/2022	5’- 6’	Native clay	VOC, PNA, mercury, lead
102a	7/21/2022	1’- 2’	Brown sand fill	Lead
102b	7/21/2022	2’- 2’6”	Black sand fill with debris	Lead
103d	7/21/2022	5’- 6’	Native clay	VOCs, PNAs
104a	7/21/2022	1’- 2’	Brown sand fill	Lead
104b	7/21/2022	2’- 3’	Black clay fill with debris	Lead
107a	7/21/2022	0’- 1’	Brown sand fill	Lead
107b	7/21/2022	2’- 2’6”	Black clay fill with debris	Lead, composite TCLP lead
107c	7/21/2022	3’- 3’6”	Native clay	Lead
108a	7/21/2022	1’- 2’	Brown sand fill	Lead
108b	7/21/2022	3’- 3’6”	Black sand fill with debris	Lead, composite TCLP lead
111c	7/21/2022	2’- 3’	Brown sand with debris	Lead
112a	7/21/2022	1’- 2’	Brown sand fill	Lead

Sample ID	Date	Depth	Soil Type	Testing Program
113a	7/21/2022	1'- 2'	Brown sand fill	Lead
114c	7/21/2022	2'- 3'	Black sand fill with debris	Lead
116b	7/21/2022	2'- 3'	Black sand fill with debris	Lead
116c	7/21/2022	3'6"- 4'	Native clay	Lead
117b	7/21/2022	1'- 2'	Brown sand fill	Lead
117c	7/21/2022	3'- 4'	Black sand fill with debris	Lead, composite TCLP lead
117d	7/21/2022	4'6"- 5'6"	Native clay	Lead
118d	7/21/2022	6'- 7'	Clay fill with trace brick	Lead, composite TCLP lead
119c	7/21/2022	4'- 5'	Black clay fill with debris	Lead, composite TCLP lead
122c	7/21/2022	3'6"- 4'6"	Black sand fill with debris	Lead, TCLP lead
123c	7/21/2022	3'6"- 4'6"	Black sand fill with debris	Lead, composite TCLP lead
124c	7/21/2022	3'6"- 4'6"	Black clay fill with debris	Lead
125b	7/21/2022	4'- 5'	Native clay	VOCs

*duplicate soil sample collected for quality assurance/ quality control purposes.

VOC- volatile organic compounds (Method 8260C)
PNA- polynuclear aromatic hydrocarbons (Method 8270D)
Mercury (Method 7471)
Lead (Method 6020)
TCLP- toxicity characteristic leaching procedure. Samples 107b, 108b, 117c, 118a, 119c, and 123c were composited by the laboratory for TCLP testing for leachable lead.

Exposure Pathway Discussion

Current EGLE guidelines call for use of an exposure pathway analysis to determine whether or not there are unacceptable risks at a property. Specifically, contamination present at a source requires a medium and receptor where the receptor concentration is above EGLE Generic Criteria, Site-Specific Criteria, and/or Screening Levels.

The property is located in the City of Detroit and is in an area serviced with municipal water and combined storm and sanitary sewer system. There are no current or planned water wells on the property or adjacent properties.

General subsurface conditions at the former commercial property consisted of non-native sandy fill soil with debris underlain by apparent naturally deposed brown, variegated, and blue silty clay. Former residential areas consisted of predominantly clay fill with occasional demolition debris underlain by moist, variegated and brown silty clay. No groundwater has been reported at the subject property.

The following table summarizes relevant exposure pathways for the subject property:

Pathway	Relevant Property Conditions/ Discussion	Relevant (yes or no)
Drinking water	Groundwater is not being used at the property.	No
Direct contact	A person could come in contact with soil on the property.	Yes
Soil particulate inhalation	A person could inhale ambient air particulate from substances present in soil via wind erosion and construction equipment.	Yes
Soil volatilization to Ambient air	A person could inhale ambient vapors from volatile substances present in soil.	Yes
Volatilization to indoor air	A person could inhale vapors in indoor air from volatile substances present at the property.	Yes
Groundwater-surface water interface	There are no surface water bodies on the subject property or adjoining properties.	No

The drinking water/drinking water protection and groundwater surface water interface/groundwater surface water protection pathways are not relevant pathways at the subject property for the following reasons:

- No significant groundwater was encountered in soil borings and test pits made on the Subject Property.
- The subject Property is located in the City of Detroit with a combined sewer system.

Chemical Test Results

The accompanying Tables 1 through 4 summarize recent and historical chemical test results in comparison to current EGLE Generic Residential Criteria (December 2013), EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels (September 2020), and Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) obtained from EGLE.

Individual chemical test results accompany this report as Attachment IV.

Volatile Organic Compounds

No VOCs were detected in the following soil samples: 1a, 2b, 4b, 5b, 7b, 7c, 7e, 8b, 9b, 9c, 10b, 11b, 12b, 12c, 103d, and 125.

Tetrachloroethene was detected in the following soil samples above Site-Specific VIAC: 3b, 3c, 3e, 5a, 6a, and 6b.

Petroleum VOCs benzene, toluene, xylenes, 1,2,4-trimethylbenzene, naphthalene, and/or 2-methylnaphthalene were detected in the following soil samples: 3b, 3e, and 5a. The detected concentrations of benzene, naphthalene, and/or 2-methylnaphthalene in Samples 3e and 5a exceed Site-Specific VIAC.

Polynuclear Aromatic Hydrocarbons

No PNAs were detected in the following soil samples: 1a, 2b, 5b, 9c, 11b, and 103d.

PNAs were detected in the following soil samples at concentrations below relevant EGLE Generic Residential Criteria and/or Site-Specific VIAC: 1a, 2a, 2b, 3b, 3c, 6b, 8b, 9c, 10b, 11b, 12b, and 12c.

Benzo(a)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene were detected in some or all of the following soil samples above EGLE Generic Residential Direct Contact Criteria: 3e, 4b, 5a, 6a, 7b,7c, and 7e.

Acenaphthylene, 2-methylnaphthalene, naphthalene, and phenanthrene were detected in some or all of the following soil samples above Site-Specific VIAC: 3e, 4b, 5a, 6a, 7b,7c, 7e, and 9b.

Mercury

Mercury was not detected in the following soil samples: 1a, 6b, 11a, and 11b.

Mercury was detected at concentrations below the Statewide Default Background Level and EGLE Generic Residential Criteria in the following soil samples: 3c, 5b, 7e, 8b, 9c, 10a, 10b, and 12c.

Mercury was detected at concentrations above the Statewide Default Background Level and EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Level in the following soil samples: 2a, 3b, 3e, 4b, 5a, 6a, 7b, 7c, 9b, and 12b.

Lead

Lead was detected below the EGLE Statewide Default Background Level and relevant EGLE Generic Residential Criteria in the following soil samples: 1a, 2b, 5b, 9c, 102a, 104a, 107a, 108a, 112a, 113a, 116c, 117b, and 124c.

Total lead was detected above the EGLE Statewide Default Background Level but below relevant EGLE Generic Residential Criteria in the following soil samples: 3b, 3c, 3e, 4b, 5a, 6a, 6b, 7b, 7e, 9b, 10a, 10b, 11a, 11b, 12b, 12c, 102b, 104b, 107c, 108b, 111c, 114c, 117d, 118d, 119c, and 123c. Additional testing to determine the relative concentrations of fine and coarse fraction lead was not performed as part of this investigation.

Lead was detected above the EGLE Statewide Default Background Level and EGLE Generic Residential Direct Contact Criterion in the following soil samples: 2a, 7c, 8b, 107b, 116b, 117c, and 122c.

Results of the composite TCLP lead for samples 107b, 108b, 117c, 118d, 119c, and 123c showed lead leached at a concentration of 0.11 mg/L, which is below the RCRA characteristic hazardous waste level.

Results of TCLP lead for Sample 122c with the highest total lead (5,270,000 ug/kg) showed lead leached at a concentration of 0.78 mg/L, which is below the RCRA characteristic hazardous waste level.

Limitations

No environmental assessment can eliminate uncertainty regarding the potential for recognized environmental conditions or the presence of contaminants in connection with a property. This environmental assessment is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the property within reasonable limits of time and cost. The conclusions represent our professional opinion based upon information obtained during assessment procedures and may not represent those that would be made under other conditions.

Nothing in this report constitutes a legal opinion or legal advice. It is suggested that environmental counsel be retained to evaluate site conditions and transaction-related issues from a legal perspective.

Property lines shown on maps are estimates and are limited by scale inaccuracies. The approximate boundaries shown on report attachments are not intended to be exact, but rather approximations to assist with review.

Conclusions

McDowell & Associates has completed a Subsurface Investigation for the subject property. The scope of work for this Subsurface Investigation was developed to investigate former residential and commercial areas on the property and to attempt to define the extent of elevated lead on the property.

Portions of the subject property have been identified as a “facility” based on polynuclear aromatic hydrocarbons (PNAs), tetrachloroethene, and metals in soil above EGLE Generic Residential Criteria and Site-Specific Volatilization to Indoor Air Criteria (SSVIAC).

As part of this assessment, a total of 12 test pits and 25 soil borings were made on the subject property. A total of 48 soil samples were obtained and submitted for chemical testing to determine the presence of some or all of the following: volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PNAs), lead, and mercury.

Results of chemical testing showed elevated VOCs, PNAs, lead, and mercury in fill soil on the property at concentrations above relevant EGLE Generic Residential Criteria. Results of Toxicity

Characteristic Leaching Procedure (TCLP) testing for lead showed the lead would not be considered a RCRA Characteristic Hazardous Waste. Remedial activities would be required to allow unrestricted residential redevelopment of the property.

If you have any questions regarding the information contained in this report, or if we can be of further service, please do not hesitate to call.

Very truly yours,

McDOWELL & ASSOCIATES

Jennifer Lagerbohm, M.S., CHMM
Senior Industrial Hygienist

Douglas M. McDowell, M.S., P.E.
Vice President

JL/jl

Attachments

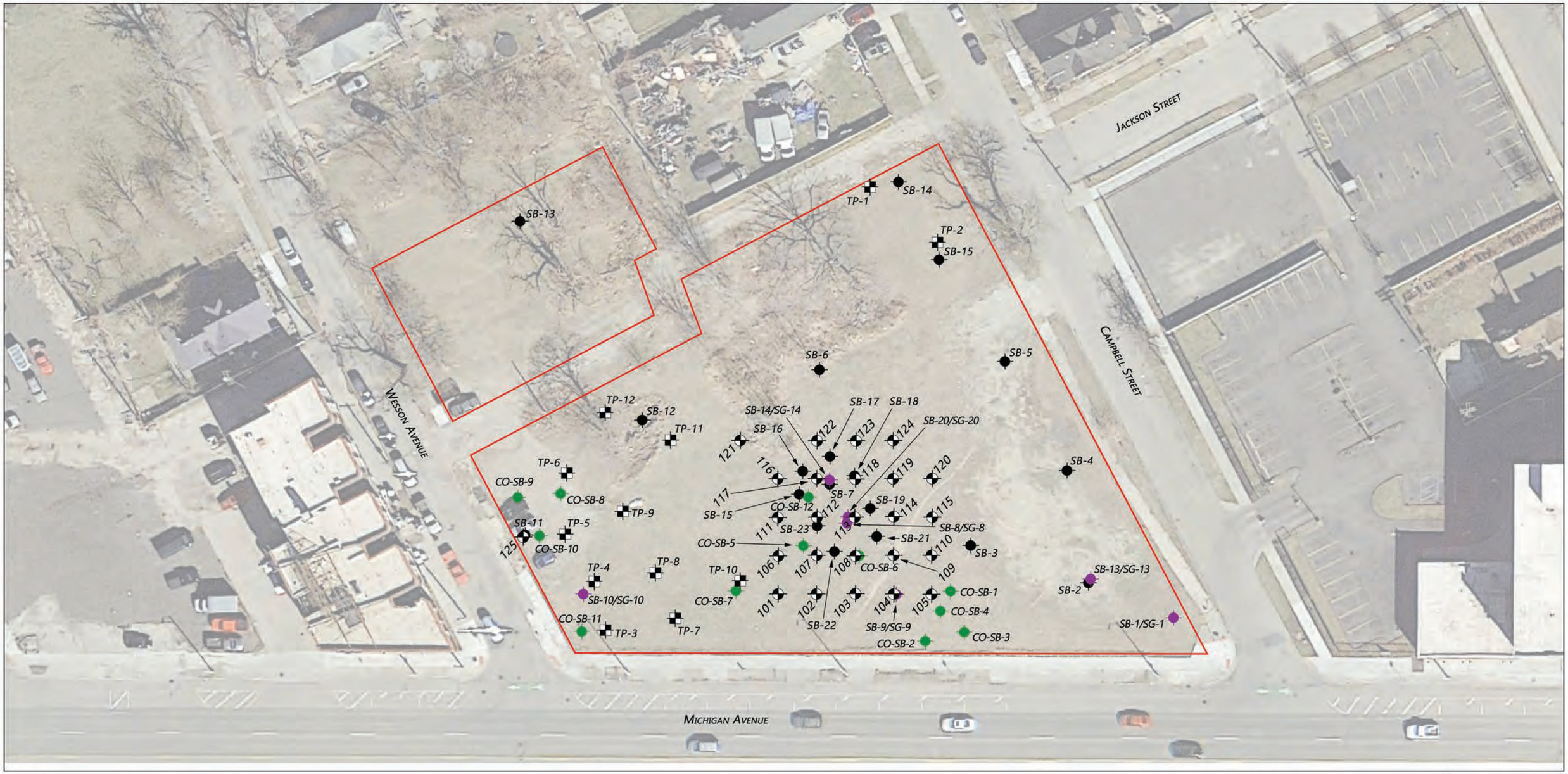
Table 1- Summary of Metals Chemistry Results (Soil)
Table 2- Summary of PNAs Chemistry Results (Soil)
Table 3- Summary of Detected VOCs Chemistry Results (Soil)
Table 4: Summary of Detected VOCs Chemistry Results (Soil Gas)

I- Site Location Map
II- Soil Boring and Test Pit Location Maps
III- Log of Soil Boring and Test Pit Sheets
IV- Chemical Test Results with Chain-of-Custody Documentation

McDowell & Associates

JOB NUMBER: 22-16296

SOIL BORING & TEST PIT LOCATION MAP



LEGEND

- TEST PIT (M & A 2022)
- SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY

NOTES:

- ALL LOCATIONS APPROXIMATE
- 2022 AERIAL PHOTOGRAPH

N

1" = 50'

0 50'

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LOG OF TEST PIT NO. TP-1

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
1a	0		Moist dark brown silty CLAY with stones and vegetation, fill	
	1			
			1'6" ← Moist dark brown silty CLAY with asphalt,	
	2		1'10" broken concrete and wood, fill	ND
	3		Moist variegated silty CLAY with broken concrete, fill	
	4			ND
	5		5'0" Moist variegated silty CLAY with occasional	
			5'6" roots	
	6			ND
	7			
	8			ND
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.		INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION		FT.		INS.
G.W. AFTER	HRS.	FT.		INS.
G.W. VOLUMES		None		

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LOG OF TEST PIT NO. TP-2

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
2a				
	1		Moist dark brown silty CLAY with brick, clay tile, glass and concrete, fill	ND
			1'9"	
	2			ND
2b	3		Moist brown silty CLAY, fill	ND
	4			ND
			4'3"	
	5		Moist variegated silty CLAY	ND
			5'6"	
	6			
	7			
	8			
	9			
	10			
	11			
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	17			
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	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.I. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF TEST PIT NO. TP-3

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue
Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist dark brown silty sandy CLAY with bricks, metal, broken concrete, gravel and vegetation, fill	ND
	2			ND
3a	3			ND
3b				
3c	4			ND
3d				
3e	5			ND
	6			ND
			6'3"	
	7		Moist brown silty CLAY	ND
	8		7'10"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
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	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTEREO AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF TEST PIT NO. TP-4

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		CONCRETE, brick debris with moist dark brown silty clay, vegetation and glass, fill	ND
	2			ND
4a	3			ND
4b				
4c	4			ND
			4'0" Moist variegated silty CLAY	
	5		4'6"	
	6			
	7			
	8			
	9			
	10			
	11			
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	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF TEST PIT NO. TP-5

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist dark brown SAND with brick, concrete, debris, asphalt milling and broken glass, fill (possible odor)	ND
5a	2			ND
	3		3'0"	ND
5b	4		Moist variegated silty CLAY	ND
	5		5'0"	ND
	6			
	7			
	8			
	9			
	10			
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	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF TEST PIT NO. TP-6

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue
Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist dark brown CLAY with brick, concrete, debris, wire, plaster, and cobbles, fill	ND
	2			ND
6a	3			ND
6b	4		3'5" Moist variegated silty CLAY	ND
	5		5'0"	ND
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF TEST PIT NO. TP-7

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist dark brown silty CLAY with brick, stone, debris, and metal, fill	ND
	2			ND
7a	3			ND
7b	4		4'0"	ND
	5		Moist BLOCK & BRICK RUBBLE with silty clay, fill	ND
7c	6			ND
7d	7		7'0" Moist brown silty CLAY with pieces of brick and concrete, fill	ND
7e	8		7'10" Concrete slab obstruction at 7'10"	ND
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
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	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF TEST PIT NO. TP-8

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			Moist brown silty CLAY with stones, brick and concrete debris, fill	
8a	1		1'0"	ND
			Moist brown silty SAND with brick, concrete, stones and debris, fill	
	2			ND
			2'5"	
	3		Moist brown silty CLAY with brick, wood and debris, fill	ND
8b	4			ND
	5		5'0"	ND
			Moist variegated silty CLAY	
8c	6		6'0"	ND
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
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	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF TEST PIT NO. TP-9

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
9a	1		Moist brown silty clayey SAND with concrete, brick, vegetation, stones and debris, fill	ND
			1'5"	
	2		BRICK, cement block and rubble, fill	ND
	3		3'0"	ND
9b	4		Moist brown silty CLAY with rubble, fill	ND
	5			ND
9c	6		5'8" Moist brown silty CLAY	ND
			6'0"	
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF TEST PIT NO. TP-10

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
10a	1		Moist dark brown SAND with brick, glass, stones and debris, fill	ND
	2			ND
			2'6"	
	3		Moist brown silty CLAY with brick, stones and debris, fill	ND
10b	4			ND
	5		5'0"	ND
			Moist variegated silt CLAY with pebbles	
10c	6		6'0"	ND
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.I. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	

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LOG OF TEST PIT NO. TP-11

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy CLAY, fill	
11a	1		Moist brown clayey SAND with brick, concrete and debris, fill	ND
			1'6"	
	2		Moist dark brown CLAY with concrete and brick, fill (odor)	ND
11b	3		3'0"	ND
	4			ND
11c	5		Moist variegated silty CLAY	ND
	6			ND
	7			ND
	8		8'0"	ND
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT FT. INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES None

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LOG OF TEST PIT NO. TP-12

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7-14-2022

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown silty clayey TOPSOIL with vegetation, fill	
12a	1			ND
	2		Moist dark brown silty CLAY with brick and rubble, fill	ND
			2'6"	
	3		Moist brown silty SAND, fill	ND
			3'6"	
12b	4		Moist dark brown silty SAND, fill	ND
			4'0"	
	5			ND
			Moist variegated silty CLAY	
12c	6			ND
	7			ND
			7'6"	
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 101

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1			ND
			Moist dark brown sandy CLAY with occasional concrete, glass and topsoil, fill	
b	2			
c	3		3'0"	ND
d	4		Moist variegated silty CLAY with trace of brick, fill	
	5		5'0"	ND
e				
	6			
	7		Moist brown silty CLAY	ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 102

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1			ND
			Moist brown silty fine SAND, fill	
a	2			
b			2'0" Moist black coarse SAND, fill	
	3		2'6"	ND
c	4		Moist brown to dark brown silty CLAY with topsoil streaks, fill	
			4'6"	
	5			ND
d	6			
			Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 103

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a			Moist brown silty fine SAND, fill	
	2		2'0"	
b			Moist black clayey SAND, fill	
	3		2'6"	ND
			Moist dark brown sandy CLAY with trace of concrete, fill	
c	4			
			4'6"	
	5			ND
d	6			3.0
	7			
	8			1.5
			Moist variegated silty CLAY	
	9			ND
	10			
	11			ND
e				
	12			
			12'0"	
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 104

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a			Moist brown silty fine SAND, fill	
	2		2'0"	
b	3			ND
			Moist black sandy CLAY with glass, asphalt and concrete, fill	
	4			
			4'6"	
c	5			ND
	6			
			Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 105

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1			ND
	2		Moist brown silty fine SAND, fill	
	3			ND
			3'0" Moist dark brown sandy clayey TOPSOIL, fill	
	4		3'6"	
	5			ND
	6		Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	

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LOG OF SOIL BORING NO. 106

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1		Moist brown silty fine SAND, fill	ND
a	2		2'0"	
b	3			ND
	4			
	5		Moist black SAND with brick, concrete and glass, fill	ND
c	6			
	7		7'0" Moist variegated silty CLAY, fill	ND
d	8		7'6" 8'0" Moist black clayey SAND with brick and glass, fill	
e	9		Moist variegated silty CLAY	ND
	10		10'0"	
	11		Moist blue silty CLAY	ND
	12		12'0"	
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.I. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 107

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a			Moist brown silty fine SAND, fill	
	2			
b			2'0" ← Moist brown clayey SAND, fill	
	3		2'6" 2'8" ← Moist black sandy CLAY with possible glass, fill	ND
c			← Moist variegated silty CLAY	
d	4		4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT FT. INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES None

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LOG OF SOIL BORING NO. 108

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a	2		Moist brown silty fine SAND, fill	
	3			ND
b			3'0" Moist black clayey SAND & GRAVEL, fill	
c	4		3'6" 4'0" Moist variegated silty CLAY	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	

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LOG OF SOIL BORING NO. 109

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1			ND
			Moist brown silty fine SAND, fill	
a	2			
			2'6"	
	3		Moist black sandy CLAY with brick and topsoil streaks, fill	ND
b			3'6"	
	4			
c	5			ND
	6		Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 110

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a				
	2		Moist brown silty fine SAND, fill	
			2'6"	
b	3		Moist black sandy CLAY with glass, fill	ND
			3'0"	
c	4		Moist variegated silty CLAY	
			4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 111

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1		Moist brown sandy CLAY, fill	ND
			1'0"	
b	2		Moist brown silty fine SAND, fill	
			2'0"	
c	3		Moist brown clayey SAND with concrete, brick and glass, fill	ND
			3'9"	
d	4		Moist dark brown silty CLAY	
			4'0"	
e	5			ND
	6			
			Moist variegated silty CLAY	
	7			ND
	8			
			8'0"	
	9			
	10			
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	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 112

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1		Moist brown silty fine SAND, fill	ND
a	2		2'0"	
b			Moist black clayey SAND with gravel, fill	
	3		3'0"	ND
c			Moist dark brown silty CLAY, fill	
d	4		3'6" Moist variegated silty CLAY	
			4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
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	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.I. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 113

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a				
	2		Moist brown silty fine SAND, fill	
			2'6"	
b	3		Moist black clayey SAND with brick and concrete, fill	ND
c			3'0"	
			Moist dark brown silty clayey TOPSOIL	
d	4		3'6"	
			Moist variegated silty CLAY 4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
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	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 114

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'1" Moist dark brown sandy TOPSOIL, fill	
a	1		0'6" Moist brown silty fine SAND, fill	ND
b	2		1'0" Moist brown to dark brown sandy CLAY, fill	
			2'0" Moist brown silty fine SAND, fill	
c	3		3'0" Moist black clayey SAND with glass, fill	ND
d			3'6" Moist dark brown silty CLAY, fill	
e	4		4'0" Moist variegated silty CLAY	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 115

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist brown silty fine SAND, fill	ND
a	2			
b	3		2'6" Moist black sandy CLAY with brick, fill	ND
c			3'0" Moist dark brown silty CLAY, fill	
d	4		3'6" Moist variegated silty CLAY	
	5		4'0"	
	6			
	7			
	8			
	9			
	10			
	11			
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	17			
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	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	

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LOG OF SOIL BORING NO. 116

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist brown clayey SAND, fill	
	1			ND
a			Moist brown silty fine SAND, fill	
	2		2'0"	
b	3		Moist black clayey SAND with glass, fill	ND
			3'6"	
c	4		4'0" Moist variegated silty CLAY	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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	15			
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	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT FT. INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES None

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LOG OF SOIL BORING NO. 117

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL OESCRIPTION.	PID
a	1		Moist brown clayey SAND with concrete, fill	ND
			1'0"	
b	2		Moist brown silty fine SAND	
	3			ND
			3'0"	
c	4		Moist black clayey SAND with brick and glass, fill	
			4'6"	
	5			ND
d				
	6		Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
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	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		

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LOG OF SOIL BORING NO. 118

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist brown to dark brown sandy CLAY, fill	
	1			ND
a	2		Moist brown silty fine SAND, fill	
	3			
			3'0"	ND
b	4			
			Moist black sandy CLAY with brick, fill	
	5			ND
c	6			
			6'0"	
d	7		Moist variegated silty CLAY with trace of brick, fill	ND
			7'6"	
e	8		8'0" Moist variegated silty CLAY	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
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	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 119

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue
Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist brown to dark brown clayey SAND with trace of concrete, fill	ND
a			1'6"	
	2		Moist brown silty fine SAND, fill	
b			2'6"	
	3			ND
	4			
c			Moist black sandy CLAY with brick and glass, fill	
	5			ND
	6			
			6'6"	
	7			ND
d			Moist variegated silty CLAY	
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 120

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist dark brown clayey SAND with topsoil and brick, fill	ND
a				
	2		2'0"	
			Moist brown silty fine SAND, fill	
b	3		3'0"	ND
c	4		Moist variegated silty CLAY with topsoil and brick, fill	
	5			ND
			5'6"	
d	6		Moist brown coarse SAND with gravel, fill	
			6'6"	
	7			ND
e			Moist variegated silty CLAY	
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES		None	

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LOG OF SOIL BORING NO. 121

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1		Moist brown to dark brown sandy CLAY with concrete, metal and roots, fill	ND
	2			
b	3			ND
	4		3'9" CONCRETE 4'0"	
	5		Moist brown clayey SAND, possible fill	ND
	6		6'0"	
c	7		Moist variegated silty CLAY	ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	

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LOG OF SOIL BORING NO. 122

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1		Moist brown SAND with pebbles, concrete and brick, fill	ND
	2		1'6"	
b	3		Moist brown silty fine SAND, fill	ND
c	4		3'6"	
	5		Moist black coarse SAND with metal	ND
	6		5'0"	
	7			ND
d	8		Moist variegated silty CLAY with coarse sand seams, fill	
	9			ND
e	10			
	11			ND
f	12		11'0" Moist brown silty CLAY	
	13		12'0"	
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
O. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.		INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION		FT.		INS.
G.W. AFTER	HRS.	FT.		INS.
G.W. VOLUMES		None		

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LOG OF SOIL BORING NO. 123

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist brown clayey SAND with traces of brick and concrete, fill	ND
a			1'6"	
	2			
			Moist brown silty fine SAND, fill	
b	3			ND
			3'6"	
	4			
c			Moist black clayey SAND with metal and glass, fill	
	5			ND
			5'0"	
d	6			
			Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	

McDOWELL & ASSOCIATES
Geotechnical, Environmental, & Hydrogeologic Services
21355 Hatcher Avenue • Ferndale, MI 48220
Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 124

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
Detroit, Michigan

SURFACE ELEV. _____ **DATE** 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		Moist brown clayey SAND with brick and concrete, fill	ND
a			1'6"	
	2			
			Moist brown silty fine SAND, fill	
b	3			ND
			3'6"	
	4		Moist black sandy CLAY with metal, fill	
c			4'6"	
	5			ND
d	6			
			Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.		INS.
G.W. ENCOUNTERED AT		FT.		INS.
G.W. AFTER COMPLETION		FT.		INS.
G.W. AFTER	HRS.	FT.		INS.
G.W. VOLUMES		None		

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LOG OF SOIL BORING NO. 125

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue, Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1			ND
	2		Moist dark brown sandy CLAY with concrete, carpet and brick, fill	
	3			ND
a	4		3'6"	
b	5			ND
c	6		Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
( ) - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT		FT.	INS.
G.W. ENCOUNTERED AT		FT.	INS.
G.W. AFTER COMPLETION		FT.	INS.
G.W. AFTER	HRS.	FT.	INS.
G.W. VOLUMES	None		