

Ms. Fran Ahern
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Wayne State University
Facilities Planning and Management
5454 Cass Avenue
Detroit, Michigan 48202

September 11, 2003
NTH Proj. No.: 16-030791-00

RE: Report on Phase I Environmental Site Assessment
Wayne State University – University Tower Property
4500 Cass Avenue
Detroit, Michigan

Dear Ms. Ahern:

We are pleased to submit this Phase I Environmental Site Assessment report for the above referenced property. This study was performed at your request in accordance with our accepted proposal and agreement (NTH Proposal No. P-20031171-F) dated July 8, 2003.

We trust that this report provides the information required to evaluate the environmental risks associated with the property and we appreciate the opportunity to assist you with this project. Should you have any questions or require additional information, please call.

Sincerely,

NTH Consultants, Ltd.

Joseph P. Sullivan
Project Geologist

Bhushan C. Modi
Project Consultant

JPS/BCM/dw

Enclosures

**Report on Phase I Environmental Site Assessment
WSU University Tower Property
Detroit, Michigan**

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**Report on Phase I Environmental Site Assessment
WSU University Tower Property
Detroit, Michigan**

1.0 EXECUTIVE SUMMARY

This report presents the results of a Phase I Environmental Site Assessment for the Wayne State University (WSU) University Tower property located at 4500 Cass Avenue, Detroit, Wayne County, Michigan. The property is irregular in shape, approximately 9.6 acres in size, and is currently occupied by a twelve-story apartment building and associated parking lots and landscaped areas.

The Phase I ESA study was performed in general accordance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-00. This assessment has revealed the following recognized environmental (RECs) conditions in connection with the property:

- Former presence of gas stations;
- Historical underground storage tanks (USTs);
- Former automotive repair shops;
- Former tool & die shops;
- Former printing shops;
- Former oil/water separator associated with past property use;
- Former in-ground hydraulic lifts associated with past uses; and
- The northeast adjacent Mobil gas station is a LUST site, and is likely to impact the subsurface conditions at subject property via migration.

No records were readily available regarding UST, oil/water separator or hydraulic lift removals. In addition, no records were readily available regarding the chemical use, storage and waste disposal practices of the auto repair shops, the tool & die shops, the gas stations or the printing shops. Additionally, no records were available regarding demolitions of the former buildings at the property. The locations of RECs are depicted on the REC Site Plan (Plate 3) in Appendix A.

The Executive Summary is an integral part of the entire report and should not be reviewed separately or utilized as a substitute for a thorough review of the entire report. The Executive Summary omits a number of details, any one of which could be crucial to the proper application of this report. Details on the Phase I ESA are presented in the text of this report.

2.0 INTRODUCTION

NTH Consultants, Ltd. (NTH) was retained by Wayne State University (WSU) – Facilities Planning Management (FPM) to perform a Phase I Environmental Site Assessment (ESA) of the WSU University Tower property located at 4500 Cass Avenue, Detroit, Michigan. A map showing the location of the property is included as Plate 1 in Appendix A.

We conducted this Phase I ESA study in general accordance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-00, entitled: “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.”

2.1 Purpose

The objective of the Phase I ESA was to provide the user of this report with an independent opinion regarding recognized environmental conditions, if any, associated with the property. According to ASTM Practice E 1527-00, Section 1.1.1, the term *recognized environmental condition* (REC) means 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. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.

2.2 Scope of Services

- A visual survey of the property was performed to identify areas of potential environmental concerns or RECs. Color photographs were taken to document site conditions at the time of the site reconnaissance. These photographs are presented in Appendix B and are referenced by number in the text of the report.
- The neighboring properties were visually observed to assess whether surface conditions or activities on these properties may have an adverse environmental impact on the property. An attempt was made to determine the previous uses of the adjacent properties through review of information compiled during the Phase I ESA.
- An approximately 114-year or greater land use history of the property was developed.
- Readily available published information was collected and reviewed relating to general geology, hydrogeology and topographic setting for the property.
- A regulatory agency file search was performed to identify Federal and State-listed sites of known or potential environmental concerns located within the minimum search distances from the property, as specified in the ASTM Practice E 1527-00.
- Local governmental agency personnel were contacted to determine their knowledge of reported environmental incidents at or in the immediate vicinity of the property.
- The information developed during this study was evaluated and this report was prepared.

This assessment did not include any sampling or testing of soil, groundwater, building materials or other on-site materials from the property.

2.3 Significant Assumptions

During the course of this study, various documents and other information published by and obtained from private organizations, as well as Municipal, State and Federal regulatory agencies have been relied upon. No independent verification or confirmation of the accuracy of this information has been performed. Additionally, information provided by the property owner and our client was presumed to be factual, unless written documentation was available indicating otherwise.

2.4 Limitations and Exceptions

The evaluations and opinions presented in this report have been made to assist the client in making a reasonable assessment of risk with respect to the presence of possible environmental concerns at the property. This study has been performed in accordance with a standard of care and diligence, which is considered to be representative of the local environmental engineering practice at the present time.

The evaluations and opinions presented in this report are based on the scope of services defined herein, and should not be misconstrued as evaluations and opinions normally pertaining to a formal environmental compliance audit. The results of this investigation cannot be construed as a certification of the absence of any contaminants on the property, but rather a diligent and prudent review of available data within an established work scope, and time and budgetary constraints.

Limiting conditions encountered during the performance of the Phase I ESA are described in appropriate sections of this report.

2.5 Special Terms and Conditions

The services for this Phase I ESA were performed in accordance with the terms and conditions of the environmental services contract between WSU and NTH.

2.6 Reliance

This report is intended for the exclusive use of Wayne State University. This report presents NTH's opinion of the property as of this date, based on the results of this study and on the information provided during the course of the study. The results of this study may not be relied upon by parties other than those identified above without the prior knowledge and written consent of NTH.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The property is located in the SE ¼ of the NE ¼ and in the NE ¼ of the SE ¼ of Section 6, Township 2 South, Range 12 East, City of Detroit, Wayne County, Michigan. The property is bordered on the north by W. Forest Avenue, on the east by Woodward Avenue, on the south by W. Canfield Avenue, and on the west by Cass Avenue. A map showing the location of the property is presented as Plate 1 in Appendix A.

Based on our discussions with Ms. Fran Ahern of WSU and on our review of City of Detroit Assessors Office records, the subject property consists of seven contiguous parcels discussed below:

Ward / Item No.	Address
2 / 000901-4	66 – 110 W. Canfield Avenue
2 / 000917	51 W. Forest Avenue
2 / 000918-21	101 W. Forest Avenue
2 / 001791-2	4501 Woodward Avenue
2 / 002110	4400 Cass Avenue
2 / 002111	4410 Cass Avenue
2 / 002112	4428 – 4430 Cass Avenue

Copies of the legal descriptions of the parcels, obtained from the City of Detroit on-line assessment page, are included in Appendix A.

3.2 Site Vicinity and Characteristics

The property is located in mixed-use area in the City of Detroit. Residential, commercial, retail and vacant properties are located in the general vicinity of the site. The municipal potable water supply and sanitary sewer systems, as well as the local public utilities (i.e., natural gas and electricity) and the central steam heating system service the area.

3.3 Description of Structures

The building at the property is a twelve-story, slab-on-grade, steel frame, apartment building.

3.4 Current Uses of the Property

The property is used for residential (apartments), institutional (child care center), broadcasting (WDET radio station) and parking lot purposes.

3.5 Current Uses of Adjoining Properties

We conducted a visual survey of the adjacent properties to identify off-site sources that might environmentally impact the subject property. We observed and identified the adjacent properties from the boundaries of the subject property and readily accessible public right-of-ways. Present land use in the immediate vicinity of the property are listed below.

Location	Features	Environmental Concerns
Northwest	Apartment buildings, Cass Café, Islamic Center of Detroit and a parking lot	None observed
North, across W. Forest Ave.	A vacant building, an office building and parking lots	None observed
Northeast	Mobil gas station	Gas station
East, across Woodward Ave.	Two multi-tenant commercial buildings	None observed
Southeast	Whitney Building and vacant commercial building	None observed
South, across W. Canfield Ave.	Parking Lot, WSU CIT Building and a radio antenna tower	None observed
Southwest, across Canfield / Cass	Knickerbocker apartment building	None observed
West, across Cass Avenue	Carrick Apartments, parking lots, WSU library annex and a residential dwelling	

For ease of reference, the locations of adjacent properties are shown on Plate 2 in Appendix A. As indicated in the above table, other than the northeast adjacent Mobil gas station, we did not observe visual evidence of activities or features on the adjacent properties that might be

expected have an adverse environmental impact on the subject property. The Mobil gas station is discussed in Section 5.1 of this report.

4.0 USER PROVIDED INFORMATION

4.1 Title Records

Title records for the property were not provided to us during the current study.

4.2 Environmental Liens

Information regarding environmental liens against the property was not provided by WSU. However, information obtained from Michigan Department of Environmental Quality (MDEQ) – Cost Recovery Unit, indicated that, at the present time, no environmental liens are recorded against the property.

4.3 Specialized Knowledge

None provided to NTH.

4.4 Valuation Reduction for Environmental Issues

NTH is not aware of known valuation reduction of the property for environmental issues.

4.5 Owner, Property Manager and Occupant Information

The property is currently owned and managed by WSU and is occupied by various private individuals (apartments), a childcare center (WSU) and WDET radio station.

4.6 Reason for Performing the Phase I ESA

The reason for performing the Phase I ESA was to provide WSU with an independent evaluation of the environmental risks associated with the subject property.

5.0 RECORDS REVIEW

As part of the current study, we reviewed various records to determine 1) the potential risk to the property from on-site and off-site sources of environmental concern; 2) the local geology and hydrogeology of the area; 3) historical uses of the property; and 4) historical uses of adjacent properties. These records were reviewed to help identify RECs, if any, associated with the property.

5.1 Standard Environmental Record Sources

As part of the current study, we reviewed readily available regulatory information to assess the possible risk for environmental liabilities at the subject property from regulatory action, hazardous material spills, or documented hazardous waste disposal at the subject property or nearby properties (i.e., properties located within ASTM-specified search distances from the subject site). This information was obtained from: (1) a review of information included in the EDR-Radius Map report for the subject property, and (2) a review of information obtained from the local environmental health department (see Section 5.2).

We retained Environmental Data Resources, Inc. (EDR), a private environmental information agency, to perform a regulatory agency database search to evaluate the possible presence of federal and state-listed sites of known or potential environmental concerns that may be located within the minimum search distances from the property. As specified in the Section 7.2.1.1 of ASTM Practice E 1527-00, search distances for various record sources generally range from adjacent sites to sites located up to one mile away. A list of the state and federal databases researched by EDR for the current study, along with the respective search distances and a brief description of each database are presented in the EDR report. For ease of reference, the entire EDR report, dated July 31, 2003, is included in Appendix C of this report.

The EDR report identifies eighty-eight (88) sites of known or potential environmental concern listed in the various State and Federal databases, within the ASTM-recommended

search distances. Fifty-six (56) of the identified sites were plotted on a street map by EDR. The remaining thirty-two (32) sites were listed in the EDR report as “orphan sites.” The orphan sites could not be plotted by EDR on a map due to lack of proper addresses or other pertinent information required for precise computer plotting, and as such could only be located within the city, county or zip code area of the subject property. We note that some of the identified sites are listed more than once, as the site may be identified in more than one database or a particular address may have more than one occupant.

Following our review of the EDR report, we conducted a drive-through reconnaissance of the area to confirm the locations of the plotted sites and to locate the orphan sites. The following EDR-identified sites are located in close proximity (less than one-eighth of a mile) to the property:

- **A J Marshall Building (4400 Cass Avenue):** This site is located at the southwest portion of the subject property (currently a landscaped area). A J Marshall building is listed as a “closed” leaking underground storage tank (LUST) site. Closed LUST sites are those that had contamination associated with the tanks, but were later properly remediated in accordance with regulatory guidelines. Our review of the MDEQ indicates that a confirmed release was discovered during tank removal activities. Various investigations were conducted and soil was found to be contaminated below residential cleanup criteria (unrestricted site use) and no groundwater was encountered. Although this site has impacted the subject property, residual contaminant levels were below residential cleanup criteria.
- **Mobil Oil SS #03-DE7 (4661 Woodward Avenue):** This gas station is located northeast of and adjacent to the subject property. Mobil is listed in the Resource Conservation and Recovery Information System (RCRIS) database as a small-quantity hazardous waste generator (SQG), indicating that they generate, store, treat, or dispose of less than 1,000 Kg of hazardous waste per month. According to the EDR report, there are no violations

reported against this site under RCRIS; therefore, this site would not be expected to have an adverse environmental impact on the property for this listing.

Mobil is also listed as a registered underground storage tank (UST) location and as a leaking UST (LUST) site. Our review of the MDEQ file for this site indicates that three different confirmed releases have been reported at this site, one in 1990, one in 1995 and the final one in 1999. Various investigations were completed in response to the releases and soil and shallow perched groundwater were found to be contaminated. Currently, free product is present at this site, less than 10 feet from the property line and a notice of off-site migration has been filed with MDEQ. Based on our review of available information, we believe that this site has high probability of impacting the subject property, via migration of contaminants.

- **Woodward & Garfield (4454 - 4466 Woodward Avenue):** This site is located immediately east of the property, across Woodward Avenue. This site is listed in the Baseline Environmental Assessment (BEA) database. The BEA database lists sites with environmental contamination at concentrations above generic residential cleanup criteria. Our review of the MDEQ indicates that a BEA was conducted for this site based on the analytical results of one soil sample. Groundwater was not encountered at this site, and there was no off-site migration of contamination. Based on our review of available information, this site would not be expected to have an adverse environmental impact on the subject property.
- **45-57 E. Canfield (45-57 E. Canfield):** This site is located just to the southeast of the property, across Woodward Avenue, and is listed as a registered UST location, with the tanks removed and as a LUST facility. Our review of the MDEQ file for this indicates that various investigations have been conducted and soil was found to be contaminated. Groundwater was not encountered and there was no off-site migration of contaminants.

Based on our review of available information, this site would not be expected to have an adverse environmental impact on the property.

This site is also listed in the BEA database. Based on our review of information for the LUST facility, this site would not be expected to have an adverse environmental impact on the property for the BEA listing.

- **Greenberg Investment Co. (4405 Cass Avenue):** This site, currently occupied by a parking lot, is located immediately west of the property, across Cass Avenue. Greenberg Investment Co. is listed as a registered UST location with the tanks removed and as a “closed” LUST site. Our review of the MDEQ file indicates that a confirmed release was discovered when the USTs were removed. As part of the remediation efforts, 720 cubic yards of contaminated soil were removed for disposal. Groundwater was not encountered. Analytical testing on confirmatory soil samples indicated that presence of residual contamination; however, the contamination was limited to the site, with no off-site migration. Based on our review of available information, this site would not be expected to have an adverse environmental impact on the subject property.
- **Police Dept. Precinct #13 (4747 Woodward Avenue):** This police station is located approximately 200 feet north-northeast of the property and is listed as a RCRIS-SQG, with no recorded violations. This, this site would not be expected to have an adverse environmental impact on the property for this listing.

This site is also listed as a registered UST location, with the tank removed and as a “closed” LUST site. Closed LUST sites are those that have had contamination associated with their leaking USTs properly remediated in accordance with regulatory guidelines. We reviewed the MDEQ file for this site, which indicates that soil contamination associated with the leaking tank was limited to the site itself and was below Tier 1 residential cleanup criteria (unrestricted site use) and groundwater was not encountered.

The site was closed under a Tier 1 residential closure. Based on our review of available information, this site would not be expected to have an adverse environmental impact on the subject property for this listing.

- **Detroit Public Schools (444 W. Willis):** The site is located approximately 270 feet west-southwest of the subject property, is currently vacant and now owned by WSU. DPS is listed as a RCRIS-SQG, with no recorded violations. Therefore, this site is not be expected to have an adverse environmental impact on the subject property for this listing.

This site is also listed as a registered UST location and as a LUST facility. We note that prior to WSU's acquisition of this site, the USTs were emptied of residual product. We requested to review the MDEQ file for this site; however, MDEQ staff indicated that MDEQ did not have a file for the site. However, based on the findings of NTH's investigations at this site (i.e., soil contamination, no aquifer and no off-site migration) prior to WSU's acquisition, this site would not be expected to have an adverse environmental impact on the subject property for this listing.

- **Canfield Lofts (460 W. Canfield):** This site is located approximately 325 feet west of the property and is listed as a RCRIS-SQG. According to the EDR report, two RCRIS violations were recorded against this site in 1992; however, the violations were brought into compliance in 1993. Therefore, this site would not be expected to have an adverse environmental impact on the property for this listing.

Canfield Lofts is also listed in the BEA database. Our review of the MDEQ file indicates that a limited amount of soil contamination was discovered at the northwest portion of this site. Groundwater was not encountered and there was no off-site migration. Based on our review of available information, this site would not be expected to have an adverse environmental impact on the subject property.

- **Hancock Center (Hancock Avenue & Cass Avenue):** This site is located an estimated 400 feet north-northwest of the property and listed as a registered UST site, with the tank removed and as a LUST site. Our review of the MDEQ file for this site indicates that a confirmed release was discovered on November 11, 2000 due to the presence of odors in the soil around the tank. No other information was available. Based on the prevailing subsurface conditions in the area (i.e., clay soils and lack of shallow groundwater), we would not anticipate that this site would have an adverse environmental impact on the subject property.
- **Cathedral Community Services (43 – 59 Garfield):** This site is located approximately 400 feet east of the property and is listed in the BEA database. Our review of the MDEQ file for this site indicates that soil contamination was discovered at the site during an environmental site assessment. However, no groundwater was encountered and there was no off-site migration of contaminants. Based on our review of the MDEQ file, this site would not be expected to have an adverse environmental impact on the subject property.

The remaining EDR-identified sites are located more than one-eighth of mile away; thus, based on the considerable distances and the prevailing subsurface conditions in the area (i.e., generally clay soils and lack of a shallow aquifer), none of these sites would be expected to have an adverse environmental impact on the subject property.

5.2 Additional Environmental Record Sources

We obtained information from other sources to determine if there were any environmental concerns associated with the property.

Local Health Department

Information obtained from Mr. Paul Max of the City of Detroit Health Department Community & Industrial Hygiene Division indicated that no known landfill sites are located

within one-half mile of the property. Additionally, Mr. Max indicated that, there were no available records indicating incidents of environmental concern at the property.

Detroit Fire Department

Additionally, we reviewed the City of Detroit Fire Department files for the property. Our review indicates that there have been no incidents of environmental concern (i.e., spills or hazardous materials responses) recorded at the property. Other information from the Fire Department regarding USTs is presented later in this report.

5.3 Physical Setting Sources

We determined the physical setting sources for the property based on a review of readily available published information and visual observations made during site survey. As described in the following subsections, the physical setting includes topography, soil general geology, hydrology, hydrogeology, and related attributes.

5.3.1 Topography

We obtained general topographic information for the property from the 1983 USGS “Detroit, Michigan” topographic map. According to these maps, the property exhibits a level surface topography, with a USGS elevation of approximately 625 feet above mean sea level.

5.3.2 Soil

The USDA *Soil Survey of Wayne County, Michigan* does not cover the subject property, since it is located within the City of Detroit. However, the soils at the property are expected to consist of thick sequences of clay, occasionally overlain by granular deposits and/or fill materials.

5.3.3 Geology

According to published sources of generalized subsurface information, the geology of the area is characterized by about 125 to 175 feet of non-homogeneous glacial deposits consisting of

lacustrine clays and silts. Underlying these glacial deposits is the Devonian-aged Dundee Limestone bedrock formation.

5.3.4 Hydrology

No surface water bodies were observed at or in the immediate vicinity (i.e., adjacent) of the property. According to the EDR report, which searched the FEMA flood zone database, the property is not located in a 100-year or 500-year flood zone.

5.3.5 Hydrogeology

Groundwater in the area is generally present in both the glacial deposits and in the underlying bedrock. However, shallow groundwater in the area of the property is expected to be erratic and almost negligible due to the high clay content of the glacial soils. Intermittent accumulation of perched water may be encountered where granular soils or fill materials overlie the clay. A hydrogeologic investigation would be required if it is desired to determine depth to groundwater and groundwater flow direction at the property.

5.3.6 Oil and Gas Wells

According to information provided in the EDR report (Appendix C), no oil or gas wells are located at or in the immediate vicinity of the property.

5.4 Historical Use Information on the Property

In accordance with ASTM E 1527-00, a historical search was conducted to determine the previous uses of the property. Only historical sources, which could be reasonably ascertained and judged likely to be useful, were obtained and reviewed during the current study. The following sections present the results of the historical searches conducted during this study.

5.4.1 Information Provided By Current Property Owner

The property is currently owned by WSU. Information regarding the past uses of the property was determined from information provided by WSU and during our site reconnaissance when

we interviewed Mr. Allen Johnson, who identified himself as the manager of University Tower.

According to available information and Mr. Johnson, WSU acquired the parcels that comprise subject property during the late 1980s and the early 1990s. The parcels were generally vacant at the time of WSU’s acquisition. Prior to that, the property had been occupied by a Vernor’s ginger ale facility and other commercial buildings. The existing University Tower building was constructed in 1995. No other historical use information was available.

5.4.2 Local Governmental Agency Record

We visited the City of Detroit Assessors Office and Building and Safety Engineering Department - Mechanical & Heating Division (M&HD) for storage tank permits, and Fire Department to review records pertaining to previous uses of the property. Our review indicated the following:

Ward / Item No. 2 / 000901-4

Assessors Office	Mechanical & Heating Division	Fire Department
Acquired in 1989 by WSU and currently a parking lot	220-gallon AST in basement at 94 W. Canfield (09/30/1936)	1931 – two story parking garage; no access to 2 nd floor for cars at 68 W. Canfield
Previously occupied by a two-story building with a basement that was constructed in 1928. Heated by central steam system	275-gallons AST in basement at 104 W. Canfield (06/01/1949)	05/23/1928 – 550-gallon UST below basement of building at 80 W. Canfield 1953 – 500-gallon UST at rear of building permanently out of use at 80 W. Canfield 06/07/1954 – UST removed from below floor of building at 80 W. Canfield (James Vernor Co.)

Ward / Item No. 2 / 000917

Assessors Office	Mechanical & Heating Division	Fire Department
<p>Acquired by WSU in 1989; currently a parking lot</p> <p>Building demolished in 1992</p> <p>Former building at property constructed in 1912 with an addition in 1925; heated by central steam system</p> <p>Used for food catering in 1985</p>	No information	<p>1976 – Prestige Collision repair garage</p> <p>1981 – Campus Collision repair garage</p> <p>1982 to 1986 – Donny’s Catering</p> <p>1989 – building vacant & secure</p>

Ward / Item No. 2 / 000918-21

Assessors Office	Mechanical & Heating Division	Fire Department
<p>Acquired by WSU in 1989; currently a parking lot</p> <p>1954 – site was a gas station, with one 1,000-gallon and two 5,000-gallon USTs</p>	No information	No file

Ward / Item No. 2 / 001791-2

Assessors Office	Mechanical & Heating Division	Fire Department
<p>Acquired by WSU in 1989; currently occupied by WSU</p> <p>Previously occupied by Vernors beginning in 1953</p> <p>Prior to Vernors, property was occupied by convention hall and stores</p> <p>Building was demolished in 1987</p>	<p>1925 – 1946: numerous ASTs in basements or 1st floor of stores at 4444 – 4606 Cass Avenue and 4635 Woodward Avenue</p> <p>8/17/1967 – one 6,000-gallon UST at 4501 Woodward</p>	<p>8/19/1916 – garage building built in 1914 for Barton Auto Top Co at 4445 Woodward Ave.</p> <p>03/06/1915 – Detroit Auto Service Station (gas station) at 4453 Woodward Ave., with one 1,570-gallon, one 1,100-gallon and one 1,000-gallon USTs</p> <p>1916 – Central Oil Co. at 4453 Woodward Ave.</p> <p>1917 – Sinclair Refining co. at 4453 Woodward Ave.</p> <p>12/06/1950 – inspection reveals no evidence (i.e., fill ports or vents) of USTs at 4453 Woodward Avenue (currently part of convention hall)</p> <p>03/26/1936 – inspection at 4446 Cass Avenue, Thompson Auto Sales new garage; one UST with no</p>

		<p>information on size, contents or location</p> <p>10/16/1963 – inspection of installation of one 1,000-gallon and two 5,000-gallon gasoline USTs at 4501 Woodward Ave. for Vernor’s Company. Based on sketch, tanks are actually located at Ward / Item No. 2 / 000918-21 on Forest Avenue</p> <p>08/23/1967 – inspection of installation of one 6,000-gallon diesel fuel UST to replace 1,000-gallon gasoline UST at 4501 Woodward Ave.</p> <p>01/31/1986 – property sold to Shula, Inc. USTs out of use at 4501 Woodward Ave.</p> <p>02/03/1987 – building vacant and closed at 4501 Woodward Ave.</p> <p>03/1988 – USTs removed at 4501 Woodward Ave.</p>
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Ward / Item No. 2 / 002110

Assessors Office	Mechanical & Heating Division	Fire Department
<p>Currently WSU parking</p> <p>1935 – gas station sales and service with two 1,000-gallon and two 550-gallon tanks</p>	No information	<p>02/13/1919 – oil/water separator in garage at rear of 124 W. Canfield</p> <p>11/30/1934 – inspection of gas station with two 1,000-gallon, two 500-gallon gasoline and one 280-gallon alcohol USTs</p> <p>04/06/1943 – inspection of gas station with two 1,000-gallon, two 500-gallon gasoline, one 280-gallon alcohol and one 250-gallon waste oil USTs; also three hydraulic lifts</p> <p>1946 – two 1,000-gallon and two 500-gallon USTs filled with water</p> <p>1948 – frame alignment pit installed</p> <p>1951 – USTs filled with sand</p>

		<p>1955 – USTs removed; property used for sales of restaurant supplies. This use continues through at least 1989.</p> <p>1993 – building vacant and secured</p> <p>1995 – 2003 various inspection of University Tower Apartments at 4550 Cass Avenue</p>
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Ward / Item No. 2 / 002111

Assessors Office	Mechanical & Heating Division	Fire Department
<p>Acquired by WSU in 1994; currently part of University Tower site</p> <p>One and two-story office and garage building built in 1948 central steam heat</p>	No records	No file

Ward / Item No. 2 / 002112

Assessors Office	Mechanical & Heating Division	Fire Department
<p>Acquired by WSU in 1989; currently part of WSU University Tower site</p> <p>Previously occupied by a two-story building of stores and lofts which was built in 1926; heated by central steam heat</p>	02/21/1940 – heated with 5-gallon attached tank and 110-gallons additional storage (i.e., AST or two drums)	08/16/1922 – inspection of installation of one 2,000-gallon gasoline UST, below floor at rear of building at 4430 Cass Avenue

5.4.3 City Directories

We reviewed historic address directories in five-year intervals dating back to 1946 (i.e., the date of the earliest directory) for the current and past property addresses (as determined through a review of Sanborn fire insurance maps) at the Bressers Company in Detroit to determine past property occupants for the known property addresses. Our review indicates that the property has been occupied by various residential and commercial entities dating back to at least 1946. The following past property occupants identified in the directories are considered to be occupants of potential environmental concern:

- Cass – Canfield Garage (104 W. Canfield)
- Sealed Power Corp.; Precision Crankshaft; Precision Service, Inc.; Guardian Collision; Campus Collision (51 W. Forest)
- Engineering Industries (4465 Woodward)
- Corry-Jamestown Manufacturing Co.; Edlund Tool Co. shop (4477 Woodward)
- Douglas Tool Co.; Cook Engineering Co.; Screw Machine Products; Staten Engineering Co. (4607 Woodward)
- Ampco Metal, Inc. (4613 Woodward)
- Newcomb Tool Manufacturing Co. (4623 Woodward)
- Ford Motor Service Dept. (4400 Cass)
- Piston Service Co. (4430 Cass)
- Aaron DeRoy Motor Car (4444 Cass)
- Market Forge Co.; Orangeville Manufacturing Co.; Ross Carrier Industrial; Truck Man, Inc. Industrial; Lusk Industrial; Erickson Power Lift Truck (4474 Cass Avenue)
- Arc Equipment Corp.; Arrow Tools, Inc.; Carlson Engineering Co.; Ettco Tool Co.; OK Tool Co., Inc.; Apex Tool & Cutter; Charles Kocsis Tools; Carl Miller Motors; Marathon Electric Manufacturing; William Peck Tools (4484 Cass)
- Continuous Imprinting Service (4490 Cass)
- Printing Service, Inc. (4498 Cass)

No details on the actual on-site activities, including chemical use, storage and waste disposal practices, by the above occupants could be readily determined during the current study.

5.4.4 Sanborn Fire Insurance Maps

NTH retained EDR to conduct a search of Sanborn fire insurance maps for the subject property. Insurance companies to assess fire risks primarily use Sanborn maps, and when available for a particular property can provide relevant information about the history of the property.

Eleven maps, dated 1889, 1897, 1919, 1921, 1950, 1953, 1957, 1961, 1977, 1988, and 1991, which cover the property, were provided by EDR. Copies of the available maps are included in Appendix D. Our review indicates the following:

Year	Property Features	Environmental Concerns
1889	Ten residential dwellings and associated outbuildings; vacant lots; and Detroit Athletic Club, including a race track, a clubhouse, a bowling alley, a grandstand and a gymnasium (under construction)	None noted
1897	Ten residential dwellings and associated outbuildings; vacant lots; and Detroit Athletic Club, including a bicycle race track, a clubhouse, a bowling alley, a grandstand and a gymnasium	None noted
1919	Eleven residential dwellings and associated outbuildings; abandoned Detroit Athletic Club; unidentified commercial building; a movie theater; a multi tenant building with stores and an automobile top manufacture; and a gas station	Automobile top manufacture and gas station
1921	Ten residential dwellings and associated outbuildings; a private school (converted house); Grindley Athletic Field; a print shop; an auto repair shop; a movie theater with stores; a multi-tenant building with stores and an auto repair shop; a used car storage building; a used car lot; an auto trimming and painting shop; and a gas station	Print shop; auto repair shops; auto painting shop; and gas station
1950	Convention hall with numerous stores and shops, including printing and an auto service station; a movie theater; four residential dwellings and associated outbuildings; a club hall (former house); a used car and auto repair shop; a gas station; an auto service shop; a commercial building with a store and a machine shop on 2 nd floor; and a commercial building with painting and upholstery	Auto service / repair; gas station; printing shop; painting shop;
1953	Convention hall building (not identified as convention hall) with numerous stores, including printing and an auto service station; auto repair shop; residential dwelling; club hall; commercial building with a store and a machine shop on 2 nd floor; parking lots; a private garage with a gas station; and a commercial building with painting and upholstery	Auto service / repair; gas station; printing shop; painting shop
1957	James Vernor Company (ginger ale) in converted convention hall building; a private gas station; a vacant building; an equipment warehouse; numerous stores, including a print shop; and a sales office	Gas station and printing shop
1961	James Vernor Company (ginger ale) in converted convention hall building; a private gas station; a warehouse building; an equipment warehouse; numerous stores, including a print shop; and a sales office	Gas station and printing shop
1977	James Vernor Company (ginger ale) in converted convention hall building; a private gas station; an auto body repair shop; an equipment warehouse; numerous stores, including a print shop; and a sales office	Gas station; printing shop; and auto body repair
1988	Vacant land, except for auto body repair shop and equipment warehouse	Auto body repair
1991	Vacant land, except for equipment warehouse	None noted

As indicated the property was occupied by various residential and commercial buildings from at least 1889 through the early 1990s. Numerous environmental concerns were identified on the Sanborn maps, including gas stations, auto repair shops, printing shops; and painting shops. These past uses are considered to be RECs at the property.

5.4.5 Aerial Photographs

We obtained copies of historical aerial photographs dated 1937, 1957, 1972, 1985, 1993 and 2000 from EDR. We reviewed these aerial photographs to determine past uses and changes in surface features that might indicate possible environmental concerns. The aerial photographs have scales ranging from approximately 1 inch = 556 feet to 1 inch = 667 feet; thus, not all surface features were visible on the photographs. Our review of the available aerial photographs indicates the following past property uses:

Year	Scale	Property Features
1937	1" = 556'	Convention hall building with several smaller buildings
1957	1" = 556'	Vernor's building with several smaller buildings and parking lots
1972	1" = 606'	Vernor's building with several smaller buildings and parking lots
1985	1" = 667'	Vernor's building with several smaller buildings and parking lots
1993	1" = 606'	Vacant land, except for a commercial building at the southeast corner
2000	1" = 667'	Existing University Tower building, surrounded by parking lots

The referenced aerial photographs do not reveal any past features or activities that would be indicative of potential environmental concerns at the property.

5.4.6 USGS Topographic Maps

We reviewed historical USGS "Detroit, Michigan" topographic maps dated 1936, 1941, 1952, 1968, 1973, and 1980 to determine past uses of or changes in the property. The referenced maps show a large building at the property identified as Convention Hall. The referenced maps do not depict features indicative of potential environmental concerns on the property.

5.4.7 Past Use Summary

The historical research to determine the past uses of the property was conducted in accordance with ASTM Practice E 1527-00. Data gaps of more than five years were encountered during the historical research (i.e., data failure).

Based on the compiled information, the existing building on the property was constructed in 1995. Prior to that, the property was used for commercial, retail, beverage packaging, recreational and residential purposes dating back to at least 1889.

Numerous RECs were identified during the historical research. These RECs include the past presence of gas stations, underground storage tanks, automotive repair shops, tool & die shops and printing shops at various locations at the property.

5.5 Historical Use Information on Adjoining Properties

We determined the past land uses of adjacent properties, through our review of the previously referenced historical Sanborn maps and aerial photographs. Our review indicates the following past neighboring property uses:

Year	Source	Northwest	North	Northeast	East
1889	Sanborn	Vacant land	No coverage	Residential dwelling	Vacant land
1897	Sanborn	Residential dwellings	No coverage	Residential dwelling	No coverage
1919	Sanborn	Residential dwellings	No coverage	Stores and used auto sales building	No coverage
1921	Sanborn	Residential dwellings	No coverage	Stores, houses and roller skating rink	No coverage
1937	Aerial	Residential dwellings	Commercial and residential buildings	Commercial buildings	Commercial buildings
1950	Sanborn	Residential dwellings and stores	No coverage	Dance hall and stores	No coverage
1953	Sanborn	Residential dwellings and stores	No coverage	Dance hall and stores	No coverage
1957	Aerial	Residential and commercial buildings	Commercial buildings and parking lots	Commercial buildings	Commercial buildings

1957	Sanborn	Residential dwellings and stores	No coverage	Dance hall and stores	No coverage
1961	Sanborn	Residential dwellings and stores	No coverage	Warehouse and stores	No coverage
1972	Aerial	Residential and commercial buildings	Commercial buildings and parking lots	Commercial buildings	Commercial buildings
1977	Sanborn	Residential dwellings and stores	No coverage	Gas station and a store	No coverage
1985	Aerial	Residential and commercial buildings	Commercial buildings and parking lots	Commercial buildings	Commercial buildings
1988	Sanborn	Residential dwellings and stores	No coverage	Gas station and a store	No coverage
1991	Sanborn	Residential dwellings and stores	No coverage	Gas station	No coverage
1993	Aerial	Residential and commercial buildings	Commercial buildings and parking lots	Commercial building	Commercial buildings
2000	Aerial	Residential and commercial buildings	Commercial buildings and parking lots	Commercial building	Commercial buildings

Year	Source	Southeast	South	Southwest	West
1889	Sanborn	Vacant land	Residential dwellings	No coverage	No coverage
1897	Sanborn	Residential dwellings	No coverage	No coverage	No coverage
1919	Sanborn	Residential dwellings	No coverage	No coverage	No coverage
1921	Sanborn	Residential dwellings	No coverage	No coverage	No coverage
1937	Aerial	Commercial and residential buildings	Commercial and residential buildings	Residential dwelling	Commercial and residential buildings
1950	Sanborn	Wayne County Medical Society club house and a furniture repair shop	No coverage	No coverage	No coverage
1953	Sanborn	Wayne County Medical Society club house and a furniture repair shop	No coverage	No coverage	No coverage
1957	Aerial	Commercial buildings	Commercial buildings	Residential dwelling	Commercial buildings
1957	Sanborn	Wayne County Medical Society club house and a furniture repair shop	No coverage	No coverage	No coverage
1961	Sanborn	Wayne County Medical Society club house and a furniture repair shop	No coverage	No coverage	No coverage

1972	Aerial	Commercial buildings	Commercial buildings	Residential dwelling	Commercial buildings
1977	Sanborn	Wayne County Medical Society club house and a furniture repair shop	No coverage	No coverage	No coverage
1985	Aerial	Commercial buildings	Commercial buildings	Residential dwelling	Commercial buildings
1988	Sanborn	Wayne County Medical Society club house and a commercial building	No coverage	No coverage	No coverage
1991	Sanborn	Wayne County Medical Society club house and a commercial building	No coverage	No coverage	No coverage
1993	Aerial	Commercial buildings	Commercial buildings	Residential dwelling	Commercial buildings
2000	Aerial	Commercial buildings	Commercial buildings	Residential dwelling	Commercial buildings

Other than the northeast adjoining gas station (1977 and later), none of the adjacent property uses identified on the Sanborn maps and aerial photographs would be expected to have an adverse environmental impact on the property. As discussed in Section 5.1, this northeast adjacent gas station has a potential to impact the subject property, via migration of petroleum contaminants through perched water and upper fill soils.

6.0 SITE RECONNAISSANCE

As part of the current study, a site reconnaissance of the property was conducted to observe for surface features indicative of potential environmental concerns.

6.1 Methodology and Limiting Conditions

Mr. Joe Sullivan of NTH performed a visual survey of the property on August 14, 2003. Mr. Allan Johnson of WSU provided access to the property. During the survey, the property was observed for evidence of potential environmental concerns or RECs such as stressed

vegetation, stained surface soil, and improper waste disposal practices. Furthermore, land use in the immediate vicinity of the property was also determined.

The visual survey was conducted by walking the perimeter of, randomly traversing the property. No limiting conditions were encountered during the site reconnaissance, except the following:

- We did not access the roof of the building;
- The presence of numerous parked cars limited observations of the ground surface;
- We did not access occupied apartment units;
- We accessed only a few vacant apartment units; and
- We could not access the childcare center or WDET radio station portions of the building.

6.2 General Site Setting

The property is located in a mixed-use area of Detroit, Michigan. The approximate configuration of the property, along with prominent surface features observed by NTH during the recent site visit, are shown on the Site Plan (Plate 2) included in Appendix A. This plan was prepared from information provided by WSU; from a 2000 aerial photograph of the property and from visual observations made during the site reconnaissance. NTH's site plan should be considered preliminary and should not be used as a legal survey. Color photographs of the property taken during visual survey are included in Appendix B.

6.3 Exterior Observations

As part of the current study, a visual survey was made of the exterior portions of the property.

6.3.1 General Observations

The property is irregular in shape, approximately 9.6 acres in size, and is currently occupied by a twelve-story, high-rise apartment building, paved and gravel-covered parking areas and associated landscaped areas. (Photographs 1 through 8). We observed a series of storm water

catch basins at the paved portions of the property. We did not observe visual evidence of spills or stains or unusual odors near the catch basins.

We observed a back-up generator on the property at the approximate location depicted on the Site Plan (Plate 2; and Photograph 9). According to Mr. Johnson, this generator is diesel fuel-powered and the diesel fuel is stored in a 400-gallon tank, which is self-contained within the generator unit. We did not observe visual evidence of fuel leakage from this generator.

No visual evidence of RECs at the property was noted during our site reconnaissance.

6.3.2 Storage Tanks

No visual evidence (i.e., vent pipes, fill ports) of the presence of underground or aboveground storage tanks (USTs or ASTs) was noted at property. Mr. Johnson indicated that he was unaware of any USTs or ASTs at the property.

We reviewed City of Detroit Assessors, Building and Safety Engineering Mechanical and Heating Division, and Fire Department Records for USTs and ASTs at the site. The available records indicate that numerous ASTs and USTs previously existed at the property.

The ASTs were generally used for storing heating oil and were located in the basements or on the first floor of various buildings and/or tenant spaces. No other information regarding the removals of the ASTs was available.

The available records indicate the following USTs were located at the property:

Location	Tank Size	Contents	Date of Installation	Date of Removal
101-151 W. Forest	Two 5,000-gallon 1,000-gallon 6,000-gallon	Gasoline Gasoline Diesel fuel	October 1953 October 1953 August 1967	March 1988 August 1967 March 1988
4400 Cass	Two 1,000-gallon Two 550-gallon 280-gallon 250-gallon	Gasoline Gasoline Alcohol Waste Oil	1934 or earlier	June 1955
4444 Cass	2,000-gallon	Gasoline	August 1922	Unknown
4446 Cass	Unknown	Unknown	Prior to March 1923	Unknown
80 W. Canfield	500-gallon	Gasoline	Unknown	June 1954
4453 Woodward	One 1,500-gallon Two 1,000-gallon	Gasoline Gasoline	1915	Unknown

The above-listed USTs with no removal or closure records are RECs at the property. We note that the USTs at 4444 and 4446 Cass may be the same tank, as one building shared more than one address.

In addition, the Fire Department records also indicated the presence of the following:

- An oil/water separator in the garage behind 124 West Canfield Avenue (February 1919);
and
- Three in-ground hydraulic lifts at 4400 Cass Avenue (April 1943).

No additional information regarding these features was available. The oil/water separator and the hydraulic lifts are RECs, due to their possible use with automotive repair or similar activities.

6.3.3 Polychlorinated Biphenyls (PCBs)

During the visual survey, the subject property was surveyed for the presence of liquid-cooled electrical units, such as transformers and capacitors. These types of units are of possible concern because they may be potential PCB sources. PCB units may subject the

owner/operator to various regulatory requirements under Toxic Substances Control Act (TSCA). The release of PCB fluids or their combustion products (in case of spill or fire) are potential environmental liabilities and may require costly remediation.

We observed two pad-mounted and four platform electrical transformers, owned by DTE Energy Company (DTE) or Detroit Public Lighting Department (PLD), on the property at the approximate locations depicted on the Site Plan (Plate 2). The transformers appeared to be in good condition, with no evidence of leakage. No signs or placards indicating whether or not the transformer contained PCBs were visible on the units. The two-pad mounted transformers were installed in 1995, thus, the likelihood of these units being “PCB transformers” is considered to be low.

Previous information obtained from DTE and PLD had indicated that DTE-owned and PLD-owned transformers are generally non-PCB, but that in the event of a spill from a transformer, DTE or PLD would be responsible for appropriate repair and cleanup, regardless of the PCB status of the transformer. In their current use and condition, the noted transformers would not be expected to have an adverse environmental impact on the property.

6.4 Interior Observations

As part of the current study, a walk-through survey of the accessible portions of the existing building was performed to observe interior conditions. The building was occupied as an apartment building, with a day care center (no access) and WDET radio station (no access) at the time of our visual survey.

6.4.1 General Observations

The building is a slab-on-grade, twelve-story, steel frame structure. The building is connected to the municipal potable water supply and sanitary sewer systems and the local public utilities (i.e., natural gas and electricity). The building is heated by the DTE central steam system. We observed floor drains, which are connected to the sanitary sewer system, at

various locations throughout the building. We did not observe unusual staining or odors near these floor drains.

The 1st floor of the building is divided into an entryway / lobby, a reception area, offices, a loading dock/receiving area, a security office, a laundry room, computer room, mechanical room, a pump room, and restrooms (Photographs 10 through 13). A childcare center and WDET radio station are also located on the 1st floor; however, we were not provided access to these areas during our visual survey. A general refuse dumpster, serviced by Republic Waste Services, and connected to a hydraulic compactor, was observed in interior the loading dock. We did not observe evidence of material spillage or leakage from this dumpster or from the compactor. According to Mr. Johnson, this compactor has leaked a few times in the past; however, immediately after each leak, the WSU Environmental Health & Safety Department responded to the site to clean up the spill.

The 2nd through 11th floors of the building are divided into central hallways and 30 apartment units, along with maintenance storage areas, a janitors closet and a communications room (Photographs 14 through 16). The apartment units are one, two or three bedrooms, with kitchen, living room and bathrooms.

The 12th floor (partial) contains HVAC equipment and the elevator control room. Cable operated elevators are located in the building.

As would be expected, we observed various sized containers of general maintenance chemicals, paints and related materials and HVAC chemicals stored at various locations throughout the building. The observed chemicals were noted to be neatly stored, with no visual evidence of leakage or spillage from the containers. In their current use and condition, the noted chemicals would not be expected to have an adverse environmental impact on the property.

We did not observe visual evidence of RECs in the accessible areas of the building.

7.0 INTERVIEWS

As part of the current study, interviews were conducted with various individuals to determine historical uses of the property and to determine environmental concerns associated with the property.

7.1 Interview with Owner

Mr. Johnson was unaware of any environmental concerns associated with the property. Other information provided by Mr. Johnson is included in appropriate sections of this report.

7.2 Interview with Site Manager

See Section 7.1.

7.3 Interviews with Occupants

Residents of University Tower were not available for interview during our Phase I ESA.

7.4 Interviews with Local Government Officials

Information obtained from local government offices is described in appropriate sections throughout this report.

8.0 CONCLUSIONS

This Phase I Environmental Site Assessment of the WSU University Tower property was performed in general conformance with the scope and limitations of ASTM Practice E 1527-00. Any exceptions to, or deletions from, this practice is described in appropriate sections throughout this report. This assessment has revealed no evidence of RECs at the property, except the following:

- Former presence of gas stations;

- Historical underground storage tanks (USTs);
- Former automotive repair shops;
- Former tool & die shops;
- Former printing shops;
- Former oil/water separator associated with past property use;
- Former in-ground hydraulic lifts associated with past uses; and
- The northeast adjacent Mobil gas station is a LUST site, and is likely to impact the subsurface conditions at subject property via migration.

No records were readily available regarding UST, oil/water separator or hydraulic lift removals. In addition, no records were readily available regarding the chemical use, storage and waste disposal practices of the auto repair shops, the tool & die shops, the gas stations or the printing shops. Additionally, no records were available regarding demolitions of the former buildings at the property. The locations of RECs are depicted on the REC Site Plan (Plate 3) in Appendix A.

9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

The field investigation for the Phase I ESA was performed by Mr. Joseph P. Sullivan of NTH Consultants Ltd. The Phase I ESA report was authored by Mr. Sullivan and was reviewed by Mr. Bhushan C. Modi of NTH Consultants, Ltd.

Joseph P. Sullivan
Project Geologist

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Project Consultant

Report On:

**Phase I Environmental Site Assessment
WSU University Tower Property
Detroit, Michigan**

Prepared for:

**Wayne State University
Detroit, Michigan**

**Project No. :16-030791-00
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