

August 21, 2023

WDNR-Remediation and Redevelopment Program
2984 Shawano Avenue
Green Bay, Wisconsin 54313

Attn: Keld Lauridsen
Hydrogeologist
Keld.Lauridsen@Wisconsin.gov

Re: NR 716 Site Investigation Work Plan
BMO HARRIS BANK BRANCH
117-125 South Chestnut Avenue
Green Bay, Wisconsin
WDNR BRRTS No. 02-05-585287
PSI Project No.: 00542852

Dear Mr. Lauridsen:

PSI has completed a Site Investigation Work Plan for the BMO Harris Bank Branch parcel located at 117-125 South Chestnut Avenue, Green Bay, Wisconsin. The plan has been prepared in general accordance with NR 716. An electronic copy has also been submitted to the WDNR.

Please contact PSI at (262) 521-2125 with any questions or comments you may have.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.



Patrick J. Patterson, P.E., P.G.
Senior Engineer
Environmental Services



Larry Raether, P.E.
Department Manager
Environmental Services

Enclosures

NR 716 SITE INVESTIGATION WORK PLAN

FOR:

**BMO HARRIS BANK BRANCH
117-125 South Chestnut Avenue
Brown County, Wisconsin
WDNR BRRTS No. 02-05-585287**

PREPARED FOR:

**BMO Harris Bank N.A.
Jones Lang LaSalle Americas, Inc.
508 North Washington
Naperville, IL 60563**

PREPARED BY:

**PROFESSIONAL SERVICE INDUSTRIES, INC.
821 Corporate Court
Waukesha, WI 53189
Telephone (262) 521-2125**

PSI PROJECT NO. 00542852

August 21, 2023



A handwritten signature in black ink, appearing to read "Patrick J. Patterson".

Patrick J. Patterson, P.E., P.G.
Senior Engineer

A handwritten signature in black ink, appearing to read "Larry Raether".

Larry Raether, P.E.
Department Manager

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1.0 INTRODUCTION

Professional Service Industries, Inc. (PSI) has prepared this Site Investigation Work Plan (SIWP) for the BMO Harris Bank Branch parcel located in Green Bay, Wisconsin, referred to herein as the "Subject Property." This SIWP has been prepared in general accordance with NR 716. Site information is included under this section.

Site Name: BMO Harris Bank Branch

Site Address: 125 S. Chestnut Avenue
Green Bay, Wisconsin 54303

The Subject Property is geographically located in the Northeast $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 36, in Township 24 North, Range 20 East, in the City of Green Bay, Brown County, State of Wisconsin. The location of the BMO Harris Bank Branch parcel is depicted on the attached Site Location Map. The general location of the Subject Property is shown on the Site Features Diagram, included herein.

WDNR BRRTS No: 02-05-585287

WDNR FID No: NA

Property Owner: BMO Harris Bank N.A.

RP Representative: June Evans
Vice President, Senior Manager CRE US Facility Management
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Chicago, Illinois 60603
Telephone: (630) 981-1538
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1.1 PROJECT BACKGROUND

The Subject Property consists of three parcels, totaling approximate 0.6-acres. These parcels are zoned as commercial and have addresses of 117 and 125 S. Chestnut Avenue and 412 Howard Street in the City of Green Bay, Wisconsin. A vacant rectangular commercial structure is situated in the northern quarter of the Subject Property and it is understood that a dry cleaner formerly occupied a portion of the building. A small vacant commercial structure is situated in the southern quarter of the Subject Property and was used as a drive-thru bank. Asphalt parking areas are present generally between these buildings. Landscaped areas are located around the southern building and along the property lines.

The surrounding properties are generally occupied by commercial and residential properties and a school building. The Fox River is situated about 700 feet to the east of the Subject Property and flows to the north into Green Bay. The general location of the Subject Property is shown on the Site Location Map in the Appendix. A diagram showing the general site features is also included in the Appendix.

It is understood that during April 2019, Tetra Tech completed a Phase I ESA of the Subject Property. According to their Phase I ESA report, prior to BMO's ownership, multiple small commercial businesses operated on the Property from the 1890s to 1986. These businesses included an automotive repair facility, dry cleaner, bank, and post office. Results of the Phase I ESA identified recognized environmental conditions (RECs) associated with the Property. The RECs consisted of: the historical use of the Subject Property as a dry cleaner over 30 years; the historical use of the Property as a commercial auto shop; the suspected presence of UST based on site reconnaissance; and the potential for soil and groundwater contamination from historic service stations and USTs on adjacent parcels.

During May and June 2019, Stantec Consulting Services Inc. (Stantec) completed a Phase II ESA on behalf of the City of Green Bay. During their Phase II ESA, nine soil borings (B-100 through B-900) were advanced at the Site with temporary groundwater monitoring wells constructed in four of the borings (TW-100, TW-600 TW-700 and TW-800). Eight of these borings were performed in the northeastern portion of the Subject Property, generally around the area of the dry cleaner. The other boring (B-700) was placed in the southeast corner of the Subject Property. In addition, two sub-slab vapor monitoring points were also installed within the Site building at 117 South Chestnut Avenue where the dry cleaner was located. Soil, groundwater and vapor samples were collected and tested for the presence of VOCs, PAHs, and RCRA Metals.

Stantec's laboratory analysis of soil samples detected multiple polynuclear aromatic hydrocarbons (PAHs), silver, and tetrachloroethene (PCE) exceeding the NR720 residual contaminant levels (RCLs) for groundwater protection and/or non-industrial direct contact. Stantec indicated that the PAH and silver detections are likely related to historic urban fill since contaminant concentrations generally decrease when native soils are encountered. They indicated that the PCE detections on the Site are likely related to the former drycleaner which historically operated on the Property identified in Tetra Tech's Phase I ESA. Stantec's laboratory analysis of groundwater samples collected from their temporary wells detected multiple RCRA metals and PCE exceeding their respective NR140 Preventive Action Limits (PALs). Multiple PAHs and vinyl chloride were also detected exceeding their respective NR140 Enforcement Standards (ESs). Sub-slab soil vapor analysis was performed on samples collected from the interior vapor points. Tetrachloroethene (PCE) was detected in both samples but below the target for sub-slab air concentrations. No other VOCs were detected above target limits for sub-slab air concentrations. Stantec indicated that the Phase II findings needed to be reported to the WDNR and additional site investigation would be required. The Stantec soil probes/borings are included on the attached Probe



Location Diagram-Stantec. The Stantec test results are included on the attached Stantec soil and water tables.

PSI was retained to perform additional site investigative services and notify the WDNR of the encountered contamination on February 7, 2020. On July 16, 2020, following approval, nine soil probes (SP-1 through SP-9) were placed on the Subject Property to evaluate the soil for the presence of petroleum and chlorinated contamination. Following soil sample collection, six of the borings were converted to groundwater monitoring wells to evaluate the groundwater for the presence of petroleum and chlorinated contamination. Three probes (SP-2, SP-3, and SP-4) and one well (MW-1) were placed in the southeast corner, while the other borings/wells were placed in the area of the former dry cleaner. Based upon the Stantec results, collected soil samples from the borings placed near the former dry cleaner were tested for the presence of VOCs, PAHs and Silver, while the samples collected from the borings placed near the southeast corner were tested for the presence of PAHs and Silver. Due to site conditions of shallow groundwater and previous sample collection depths, these soil samples were generally collected from the upper 5 feet. The PSI soil probes/wells are included on the attached Probe and Well Location Diagram.

No VOCs or Silver were detected above their limit of detection (LOD) in the selected soil samples, except for a laboratory estimated value for Silver that was below NR720 soil quality standards. Several PAHs were detected in the collected soil samples. However, only a few of the detected PAHs were above their NR720 soil quality standards. These compounds consisted of Benzo(a)pyrene, Benzo(b)fluoranthene, and Chrysene and were present in the soil samples collected near the northeastern corner of the northern building (SP-4) and in a soil sample collected in the southeast property corner (SP-3) near Howard Street. These concentrations are included on the attached soil analytical results table.

Following the well installation activities, the wells were developed in accordance with WDNR development procedures and subsequently sampled on July 17, 2020. Collected groundwater samples were tested for the presence of VOCs, PAHs and RCRA Metals.

Only low levels of several PAHs, with the majority indicated as laboratory estimates, were detected within the collected samples with only one estimated concentration slightly above its NR140 groundwater quality standard. Barium was detected in the water samples with two concentrations above its NR140 PAL, but below its NR140 ES. VOCs were detected in the collected groundwater samples. Vinyl Chloride was detected in four of the samples above its NR140 ES. Several other chlorinated VOCs consisting of PCE, Trichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, 1,2-Dichlorobenzene, and 1,2-Dichloropropane and Benzene were detected above NR140 standards. Several of these levels were indicated to be laboratory estimated values. These concentrations are included on the attached groundwater analytical results table.

Because of the encountered soil contamination in the area of the southeast corner and near the northeast corner of the northern building and the presence of chlorinated compounds in the groundwater, it was recommended that additional investigative activities be performed to further evaluate the degree and extent of the PAH-impacted soils encountered in the northeast and the southeast corners of the Subject Property. It was also recommended that additional investigative activities be performed to further evaluate the degree and extent of the chlorinated-impacted groundwater contamination to the north of the northeast building corner of the northern building, within



the eastern alleyway, and to the south of the southeast building corner of the northern building. Further, due to the type of contamination, a piezometer is recommended to be installed near the southeast corner of the northern building to evaluate the deeper groundwater aquifer for the presence of chlorinated compounds.

Following additional site investigation activities and groundwater monitoring events, PSI prepared a NR716 Site Investigation Report (SIR) and submitted it in March 2023 to the WDNR for their review and approval. In a May 15, 2023 letter, the WDNR did not approve of the submitted SIR and requested that additional investigative activities be performed prior to their final approval. They indicated that the additional investigation could be performed in a phased approach. As such, this SIWP has been prepared for the next phase of investigation. As indicated in the WDNR response letter, other investigative phases may need to be completed in the future.

2.0 PHYSIOGRAPHICAL AND GEOLOGICAL SETTING

2.1 LOCATION OF THE SUBJECT PROPERTY

PSI reviewed the United States Geological Survey (USGS) Green Bay West Quadrangle Map, dated 1992, showing the area of the Subject Property. According to the contour lines on the topographic map, it is located at approximately 590 feet above mean sea level (MSL). The contour lines around the Project Area indicate that the area is generally flat with a slight slope to the east. The nearest water body is the Fox River to the east. The site location is shown on the Site Location Map included in the Appendix.

2.2 PHYSICAL CHARACTERISTICS OF THE SUBJECT PROPERTY

Quaternary Deposits & Geomorphology

Based on PSI's review of the "Soil Survey of Brown County, Wisconsin" publication by the United States Department of Agriculture (USDA) Soil Conservation Service (issued June 1972), the area around the Subject Property is indicated to be within a "Fill Land", which is along the Fox River. This soil series consists of variable soils that are classified as somewhat excessively and well-drained soil. The underlying natural soils are anticipated to be The Manawa Silty Clay Loam soils, which is somewhat poorly drained soils.

Hydrogeology

The hydraulic conductivity of the fill land is highly variable. The estimated hydraulic conductivity within the underlying Manawa Silty Clay Loam series within this area of Wisconsin is generally a moderately low permeable material ($\leq 1 \times 10^{-6}$ cm/sec). This is consistent with the subsurface soils encountered within the completed soil probes placed on the Subject Property, which were variable thicknesses of the fill material overlying the native clayey soils to the maximum depths explored. Based upon previous field collected data, the groundwater flow direction is to the northeast towards the Fox River and Green Bay (Lake Michigan).

Surface Drainage

Surface drainage is to the east towards the Fox River. The surface water drainage at the Subject Property lies within the Lake Michigan Watershed.



Potential Migration Pathways

Chlorinated-impacted groundwater contamination was detected in several samples collected from the wells placed in the northern portion of the Subject Property. It is anticipated that a potential migration pathway is present in the eastern property boundary of the Subject Property and potentially consist of a stormwater utility line present in the eastern alley roadway.

Soil Conditions

The surface material at probe locations generally consisted of about 3 inches of asphalt overlying granular base course fill material or about 6 inches of topsoil fill material. The underlying fill material consisted of silty sand to sandy silt and silty clay to sandy clay to depths of about 4 to 7 feet below grade. The underlying natural soils encountered beneath the fill material consisted generally of reddish-brown silty clay with variable sand seams to the termination depths of about 5 to 15 feet below grade. Solvent-like and petroleum-like odors were observed within soil samples collected from several of the Stantec probes/borings at depths between about 2 to about 8 feet below grade. No petroleum odors were observed within the soil samples collected from the remaining Stantec probes/borings or the soil samples collected from the PSI probes/borings.

Shallow Groundwater Conditions

Groundwater levels were measured numerous times within the monitoring wells at depths of about 3.8 to 9.8 feet below the ground surface. Based upon the groundwater levels and surrounding surface features, the regional shallow groundwater flow direction is easterly/southeasterly towards the Fox River.

3.0 SAMPLING AND ANALYSIS STRATEGY

3.1 SCOPE OF WORK

The general proposed scope of work will consist of the following activities: the collection of water samples from ten existing wells; the installation of an additional groundwater well to the west of MW-12 and the collection of a water sample; laboratory analysis of water samples for the presence of chlorinated contaminants, installation of a sub-slab vapor port near center of floor slab and collection of a vapor sample for the presence of chlorinated contaminants; placement of a passive vapor sampler within the building to test for TCE for a ten day period; and data analysis and interpretation. A status update report will be prepared.

1. One NR141-compliant groundwater monitoring well will be installed to a depth of about 15 feet below grade and will be located to the west of MW-12 to further evaluate the presence of chlorinated compounds. This well will be installed with 4" hollow stem augers without soil sample collection. The groundwater monitoring well will be installed in general accordance with WDNR procedures set forth in Chapter NR141. The well construction will consist of a 10-foot section of 2-inch diameter, Schedule 40 PVC screen with 0.010-inch factory cut slots and 2-inch diameter Schedule 40 PVC flush threaded riser pipe extending to about 6 inches below the ground surface. A steel protective flush mount cover will be placed over the top of each PVC riser pipe. Clean sand backfill will be utilized as a filter medium around the screened PVC to a level about two feet above



the top of the screened section. The sand backfill will be placed into the annular space between the auger and PVC during progressive withdrawal of the auger. Bentonite chips will fill the annular space above the sand filter. The cover will be concreted in the surrounding pavement.

2. The new well will be developed in accordance with WDNR requirements and samples collected from this well along with ten existing wells will be tested for the presence of TCE, PCE, VC, DCE, ethene, and ethane. Currently, it is proposed to perform one groundwater sampling event.
3. PSI will gain access to the existing building and will install a sub-slab vapor sampling port near the center of the floor slab and collect a vapor sample. The collected vapor sample will be tested for the presence of VC, TCE, PCE, and DCE.
4. An ambient air sample of the existing bathroom will be collected utilizing a passive sampler and in accordance with WDNR sampling procedures and will be analyzed for the presence of TCE. This sampling event will be performed for a 10-day period.
5. If contaminants are detected within the submitted groundwater samples above WDNR quality standards or if elevated levels are detected in the ambient air sample or the sub-slab vapor sample, additional sampling activities may be required to be completed.
6. If contaminants detected within the water from the newly installed well, sub-slab vapor sample, or the ambient air sample, and the test results of the water samples collected from the existing wells show favorable results for site investigation approval, PSI will prepare a revised SIR and submit it to the WDNR for their review.

3.2 QUALITY ASSURANCE/QUALITY CONTROL MEASURES

All equipment decontamination, sample collection, sample custody records, and analysis will be performed in general accordance with methods prescribed by the United States EPA and the WDNR.

Groundwater samples will be collected with disposal bailers. The groundwater samples from the wells will be handled with disposable Nitrile gloves during initial collection, and when placed into laboratory jars. These procedures will be performed to reduce the potential for cross-contamination between sample locations.

Per the WDNR request, the collected groundwater samples will be submitted to an analytical laboratory to test for the presence of VC, PCE, TCE, DCE, ethene and ethane, while the sub-slab vapor sample will be tested for VC, TCE, PCE, and DCE. The collected ambient air sample will be tested for TCE. The selected groundwater samples will be placed within clean laboratory provided jars that are appropriately preserved. The sub-slab vapor sample will be collected will a laboratory provided vapor canister. The samples will be placed on ice, chain of custody procedures initiated, and they will be submitted to a WDNR-licensed laboratory.



4.0 GENERAL

4.1 SCHEDULE

It is anticipated that the field activities will be performed in October and November 2019. Assuming that there are no significant delays in the project and the analytical test results are favorable, work of this nature can usually be completed within one to two months.

4.2 UTILITIES

The subcontractor will contact Diggers Hotline for public utility clearance prior to the start of probing activities. This service does not mark the locations of privately-owned utilities, including lateral water and sewer lines; therefore, PSI will also subcontract a locating firm for marking private utilities.

4.3 RESPONSIBILITIES & PROJECT COORDINATION

The client is responsible for obtaining access to the Subject Property for PSI and their subcontractors to perform the work.

4.4 SUBMITTAL CERTIFICATION

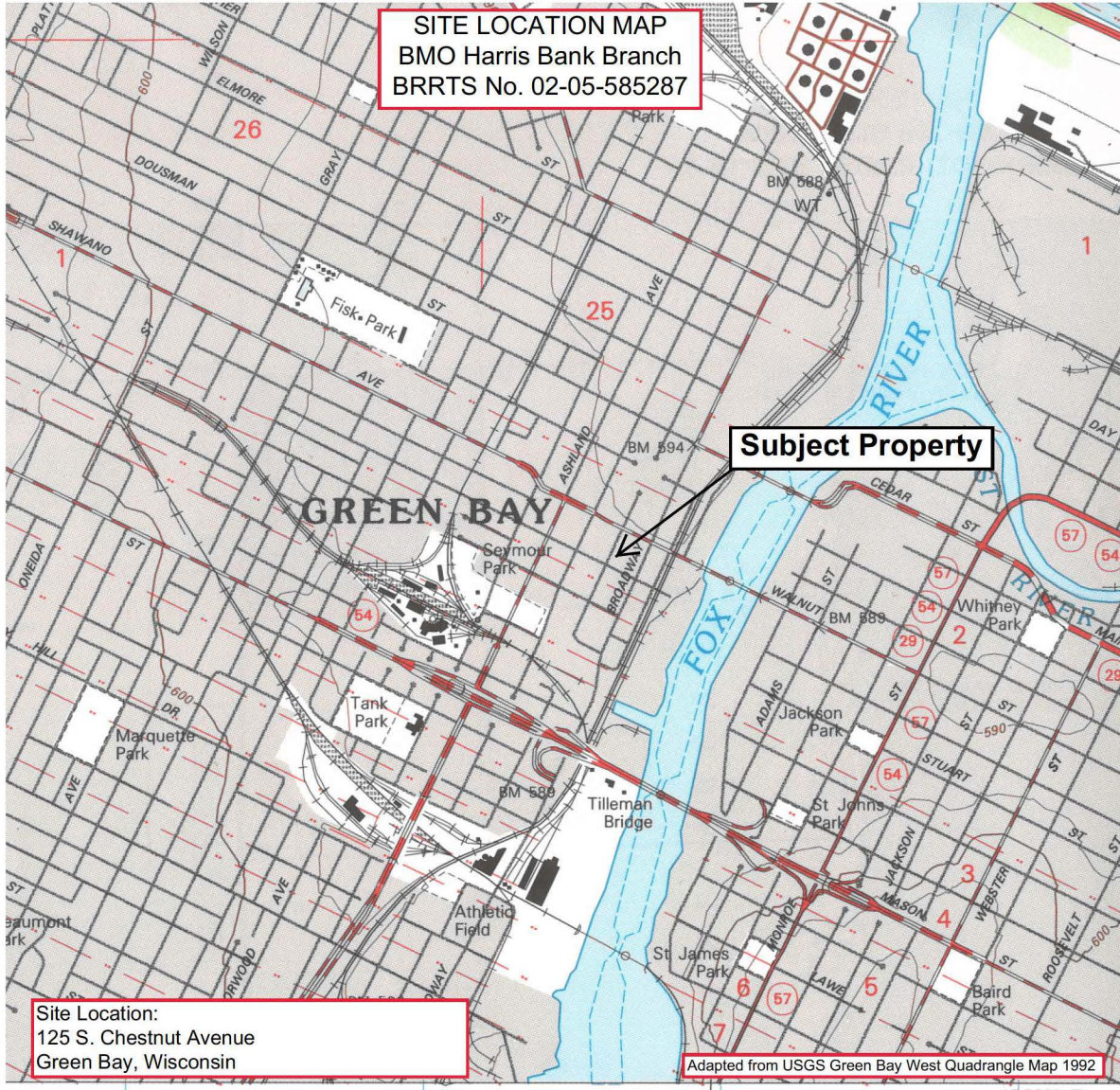
"I, Patrick J. Patterson, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

8/21/2023

Signature and Title

Date

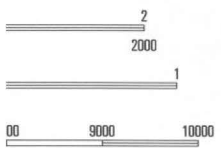
SITE LOCATION MAP
BMO Harris Bank Branch
BRRTS No. 02-05-585287



Site Location:
 125 S. Chestnut Avenue
 Green Bay, Wisconsin

Adapted from USGS Green Bay West Quadrangle Map 1992

2' 30" R 20 E R 21 E 420000mE
 INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA - 1996



QUADRANGLE LOCATION

1	2	3	1 Pulaski
			2 Suamico
4		5	3 Little Tail Point
			4 Oneida North
			5 Green Bay East
6	7	8	6 Oneida South
			7 De Pere
			8 Bellevue

WISCONSIN 53706
 JEST

ADJOINING 7.5' QUADRANGLE NAMES

GREEN BAY WEST,
44088-E1-TF-024
1992

DMA 3373 II SE-SERIES V861



SITE FEATURES DIAGRAM

BRRTS No. 02-05-585287



Legend

- Open Site
- Closed Site
- Continuing Obligations Apply
- Facility-wide Site

Site Addresses & Property IDs:
 117 & 125 S. Chestnut Avenue
 (3-100 & 3-101)



NAD_1983_HARN_Wisconsin_TM

1: 990



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Note: Not all sites are mapped.

BMO Harris Bank Branch
117 & 125 S. Chestnut Avenue
Green Bay, Wisconsin



PROBE, VAPOR POINT AND VAPOR SAMPLE LOCATION DIAGRAM
BRRTS No. 02-05-585287



LEGEND

- Soil Probe Location
- Soil Vapor Point Location
- Vapor Sample Location
- Sanitary Line Location
- Stormwater Line Location
- Natural Gas Line Location



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1: 990



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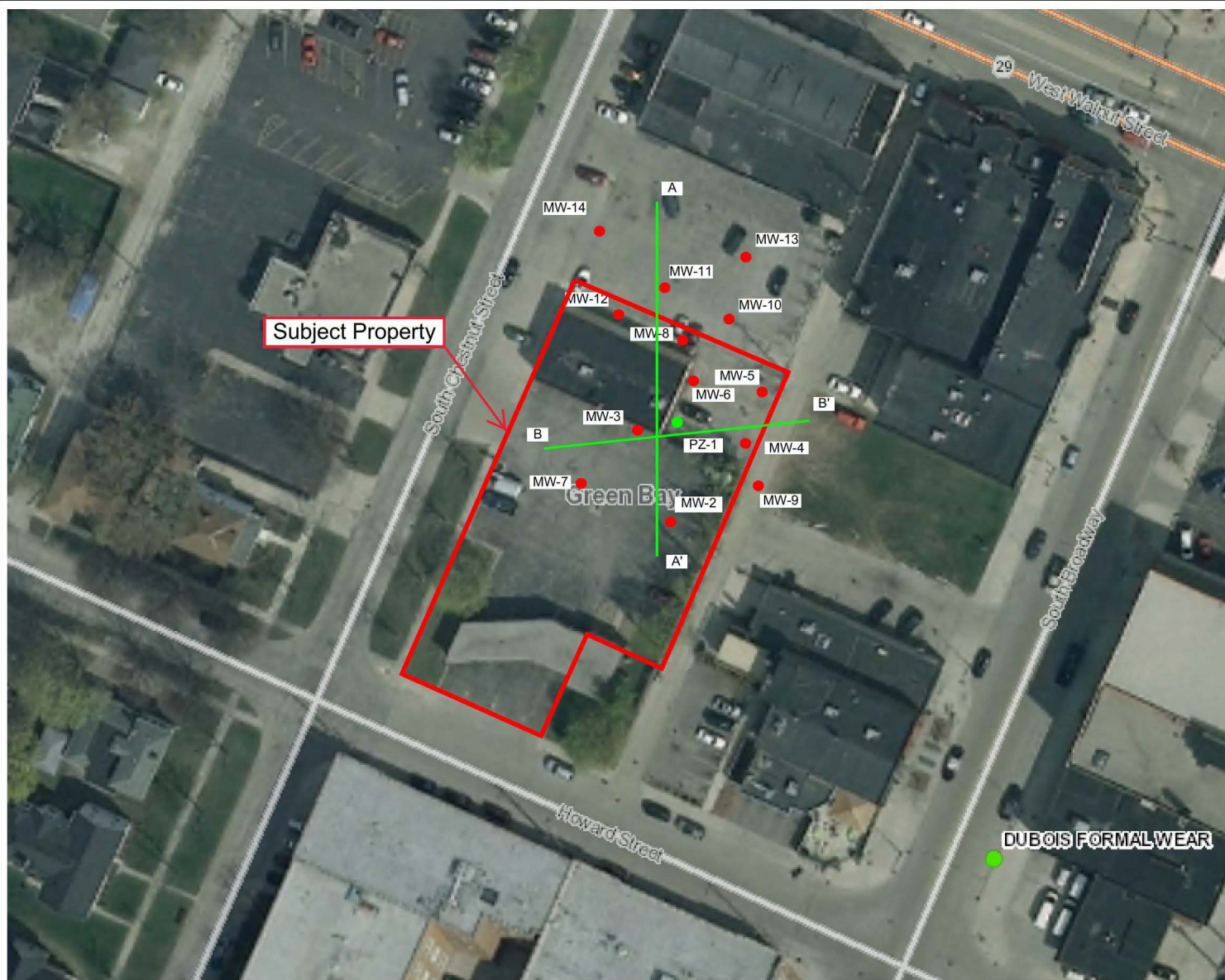
Note: Not all sites are mapped.

BMO Harris Bank Branch
117-125 S. Chestnut Avenue
Green Bay, Wisconsin



EXISTING WELL LOCATION DIAGRAM

BRRTS No. 02-05-585287



LEGEND

- Monitoring Well Location
- Piezometer Location



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BMO Harris Bank Branch
117-125 S. Chestnut Avenue
Green Bay, Wisconsin



PROPOSED VAPOR POINT AND WELL LOCATION DIAGRAM
BRRTS No. 02-05-585287



LEGEND

- Existing Well Location
- Piezometer Location
- Proposed Well Location
- Proposed Sub-Slab Point Location



NAD_1983_HARN_Wisconsin_TM

1: 990



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