

SITE INVESTIGATION REPORT

Former Spic and Span
4301 North Richards Street
Milwaukee, Wisconsin
BRRTS # 02-41-585636

Prepared for

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October 2020

Prepared by

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Project No. 2019-0153.02

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1. EXECUTIVE SUMMARY

On October 23, 2019 two interior air vapor samples were collected for analysis for VOCs to determine if VOCs were present in the interior of the former Spic and Span facility at 4301 North Richards Street, Milwaukee, Wisconsin. The samples were collected at the request of real estate brokers who were working on the sale of the property. One sample was collected from the area of the former dry-cleaning machines and one on the eastern side of the building away from the dry cleaning processing area. Both air samples collected had Tetrachloroethylene (PCE) above the WDNR Indoor Air Vapor Action Levels (VALs). The site location and building plan are shown in Figures 1 and 2. The laboratory results on the air samples are summarized in Table 1.

Drawings were reviewed to determine utility locations under the floor slab to check for possible conduits that would facilitate movement of contamination from the dry-cleaning machine area. Ground Penetrating Radar (GPR) was used to verify the location of the underground utilities and fill in any gaps. This information was then used to locate the sub-slab vapor sample points.

A sub-slab soil gas survey was then completed at the site on January 13, 2020. Six Summa Canisters were used to collect sub-slab vapor samples from the area in and around the former dry-cleaning operations. The samples, SSVS-1 and SSVS-3, exceeded the Sub-Slab Vapor Risk Screening Levels for PCE, and the samples from SSV-1, SSV-3 and SSV-5 exceeded the Sub-Slab Vapor Screening Levels for Trichloroethene (TCE). These samples were collected from along the sewer line that runs south, then east, from the area of PCE use. There were no other exceedances of the Sub-Slab Vapor Screening Levels. The sub-slab vapor locations are shown in Figure 2. The sample results are summarized in Table 2.

On May 26, 2020 eight soil borings were completed to depths of 8 to 10 feet bgs. Soil samples were collected from the borings for observation and field screening for Volatile Organic Compounds using a Photoionization Detector and based on the field screening, up to two soil samples from each boring were submitted for laboratory analysis for PCE and its breakdown products. Groundwater was not observed during the geo-probe boring investigation. Trimethylbenzene exceeded the Direct Contact RCL in boring B-6 but the sample was located 8.0-10.0 feet below grade. There were no other exceedances for the Direct Contact RCL. There were exceedances of RCLs for groundwater in soil for PCE in all the borings B-1 thru B-8 and for TCE in B-1, B-2, B-4, B-5, and B-7. There were also exceedances of RCLs for groundwater in soil for cis-1,2-dichloroethene in B-1, B-2, B-4, B-6, and B-7.

Based on these results, the area and depth of the investigation was increased. On July 28, 2020 one shallow hand auger was completed on the north side of the property outside of the building. One sample was submitted for laboratory analysis for VOCs from the 3.0-3.5 feet depth (approximately 4.0 to 4.5 feet below the building floor). PCE was detected just above the detection limit in this sample, at a concentration of 0.071 mg/kg. There were no other compounds detected in this sample.

On August 10, 2020, seven soil borings were completed to depths of 17.5 to 25.0 feet bgs. Soil samples were collected from the borings for observation and field screening for Volatile Organic Compounds using a Photoionization Detector, and based on the field screening, two to three soil samples from each boring were submitted for laboratory analysis for VOCs. Groundwater was not observed during the geo-probe boring investigation. No VOCs above the Direct Contact RCLs were detected in laboratory samples submitted from the seven soil borings completed during this part of the site investigations. PCE was detected above the groundwater RCLs in soil borings B-9 7.5 to 10.0 feet, B-12 12.5 to 15.0 feet, B-13 10.0 to 12.5 feet, and B-14 17.5 to 20.0 feet. However, PCE was not detected deeper in these borings. The soil boring locations are shown in Figure 2. The soil sample results are summarized in Table 3. The laboratory analytical reports are included in Appendix B.

The results of the Site Investigation indicate the depth of contamination is limited to approximately 20 feet below ground surface and does not extend significantly into the native clay soils. The contamination is limited to the area north of SB-11 and SB-10. Although the results from HA-1 and SB-9 indicated that there is some shallow spread to the north and west, the concentrations are significantly lower than in the source area and along the sanitary sewer line. To the east, there seems to be some spread along the sanitary sewer line, and to a lesser extent, the storm sewer line on the north side of the building interior. And as noted, the PCE detected in the soil vapor samples also indicate migration along the sanitary sewer line to the east.


Overall, there is no indication of a direct contact risk. The risk to groundwater also seems to be limited - soil samples from the deeper sampling intervals did not contain VOCs above the groundwater RCLs and groundwater was not encountered during the site investigation, the area is covered with a building and a concrete floor which limits infiltration, and there is not a drinking water risk because the site is on City water. Although the indoor air samples exceeded the Indoor Air Vapor Action Level, the highest concentration was approximately 0.0033 of the 2019 OSHA 8-hr. TWA, and given that the source is limited and will continue to vent and naturally degrade over time,

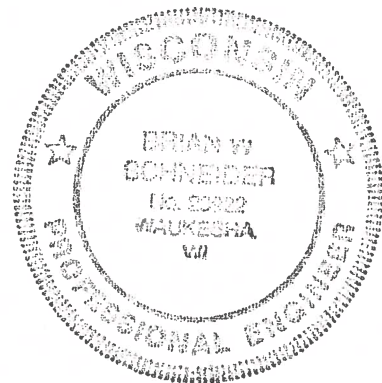
the overall mass of contamination and potential concentrations in the indoor air will continue to decrease.

It is our opinion that the remaining element to investigate is the apparent migration of PCE to the east along the sanitary sewer line. The location and direction of this line is known as well as the approximate depth. Our recommendation is to continue the soil boring evaluation to the east along the sewer line with up to three additional borings.

Certification

I, Brian Schneider, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all 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.

 _____, Project Manager, #28922
Signature, title and P.E. number P.E. stamp



2. GENERAL INFORMATION

1. Responsible Party:

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Former Spic And Span

4301 North Richards Street

Milwaukee, WI 53212

NE ¼ of the SE ¼ of Section 05, T07N, R22E

Latitude 43.094856

Longitude -87.9082073

The soil contamination is located under the concrete floor slab inside the building on the north side of the building.

4. Location Map

Figure 1 USGS Site Location Map

5. Other Maps

Figure 2 Vapor Sample, Sub-slab Vapor Sample, and Soil Boring Location Map

6. Geographic Position Map of the Property

Figure 1 WDNR RR Site Location Map

2. BACKGROUND INFORMATION

1. Nearby Contaminated Sites.

The Dahlman Construction site (BRRTS # 03-41-003776) is located southwest / adjacent of the Spic and Span site. The site was opened in 1993 for a hazardous substance discharge of petroleum from a fuel oil UST located below the building boiler room. The UST was closed in place due to the cost to remove it, and the structural damage possible to the building if it was removed. A site investigation was performed, limited low level DRO contaminated soil remains. The WDNR closed the site in 1994.

Another spill incident was reported at the Dahlman Construction site (BRRTS # 03-41-001299) after removal of two 2,000-gallon gasoline USTs in 1991. Investigation was performed to determine if contamination was present outside of the tank excavation, no TPH was detected in the borings in the area of the tank excavation. Low level benzene 31 ppb was detected in the water sample collected from the sump. The sump was pumped out several times and then resampled for BTEX in the water, none was detected. The site was closed by the WDNR in 1992.

The 4213 North Richards Street site (BRRTS # 02-41-579469) is located southeast of the Spic and Span site. The site was opened in 2017 after report of a release of PCE and TCE in the groundwater at the site. A site investigation was performed and there is residual soil and groundwater contamination present at the site in the area of MW-2 / GP-4. The contamination does not extend off site based on the environmental work performed there.

2. Previous Occurrences at the Subject Property.

In December of 2012, two underground storage tanks were removed from the south side of the building, one 8,000-gallon diesel fuel UST and one 6,000-gallon fuel oil UST (BRRTS 03-41-559767). The tanks were removed and a Tank System Site Assessment (TSSA) was done. Low level contamination was present but below the standards. The site was closed by the Department of Commerce with no further action required.

In December of 1987 notification of hazardous discharge was reported. In September a Tank System Site Assessment was performed for a 5,000-gallon waste solvent tank located on the west side of the building. An investigation was done to investigate soil and groundwater contamination associated with the waste solvent tank. A round of soil borings were done and monitoring wells were installed. Additional geo-probe were done at the site to further define the extent of soil contamination. The site was put into the WDNR for closure, a cap was required to be placed over the area of the highest remaining contamination. In November of 2019, the area was closed with soil and groundwater restrictions on the site and extending slightly off site to the north adjacent property.

3. Current Investigation on the Subject Property

On October 23, 2019 two interior air vapor samples were collected for analysis for VOCs to determine if VOCs were present in the interior of the former Spic and Span facility at 4301 North Richards Street, Milwaukee, Wisconsin. The samples were collected at the request of real estate brokers who were working on the sale of the property. One sample was collected from the area of the former dry-cleaning machines and one on the eastern side of the building away from the dry cleaning processing area. Both air samples collected had Tetrachloroethylene (PCE) above the WDNR Indoor Air Vapor Action Levels (VALs). The site location and general building plan are shown in Figures 1 and 2.

Drawings were reviewed to determine utility locations under the floor slab to check for possible conduits that would facilitate movement of contamination from the dry-cleaning machine area. Ground Penetrating Radar (GPR) was used to verify the location of the underground utilities and fill in any gaps. This information was then used to locate the sub-slab vapor sample points.

A sub-slab soil gas survey was then completed at the site on January 13, 2020. Six Summa Canisters were used to collect sub-slab vapor samples from the area in and around the former dry-cleaning operations. The samples, SSVS-1 and SSVS-3, exceeded the Sub-Slab Vapor Risk Screening Levels for PCE, and the samples from SSV-1, SSV-3 and SSV-5 exceeded the Sub-Slab Vapor Screening Levels for Trichloroethene (TCE). These samples were collected from along the sewer line that runs south, then east, from the area of PCE use. There were no other exceedances of the Sub-Slab Vapor Screening Levels. The sub-slab vapor locations are shown in Figure 2.

4. Methods of Investigation.

Two indoor air samples were collected inside the building on October 23, 2019. One at the area where the former dry cleaning solvent tanks were located and one in the east side of the factory area away from the solvent tank area. The two summa canister samples were collected for eight-hour time period, and were analyzed for VOCs. Both air samples collected had Tetrachloroethylene (PCE) above the Indoor Air Vapor Action Levels (VALs).

A sub-slab soil gas survey was completed at the site on January 13, 2020 based on requests by real estate brokers that were presenting the property for sale. Six Summa Canisters were used to collect sub-slab samples from the area of the former dry cleaning operations. Three of the samples, SSVS-1 and SSVS-3, exceeded the Sub-Slab Vapor Screening Levels.

A Phase II Environmental Site Assessment Work Plan was subsequently submitted to the WDNR in December of 2019.

Eight geo-probe borings were done as part of the Site Investigation. Samples were screened with a Photo Ionization Detector (PID) and visually examined. Samples were selected for laboratory analysis based on PID readings, visual examination, and depth. A second round

of seven soil borings and one shallow hand auger were also done as part of the Site Investigation to further define the horizontal and vertical extent of contamination.

3. BACKGROUND

3.1. Purpose of Investigation and Remediation Activities

The purpose of the Site Investigation summarized in this report was to evaluate the magnitude of subsurface contamination associated with the former dry cleaning operations on site, and to propose methods of management of the subsurface contamination remaining on site, if needed.

3.2. General Site Information

To the extent practical, the scope of the project was defined in consideration of the criteria listed in NR 716.07, as follows:

- Site Use. The site is an industrial property that was a former dry cleaning facility. The property is currently vacant and is up for sale. The site has an asphalt parking lot on the south side of the site. The site location is shown in Figure 1.
- Type and Amount of Impact. VOC compounds were detected at levels above the RCLs for groundwater in some of the samples collected from the soils in the north-central portion of the building interior near the former dry cleaning area in the first round of soil sampling in borings B-1 through B-8. Several of the borings did not go deep enough to get beyond the contaminated soil. Seven additional boring done in the second round of sampling were drilled and sampled to deeper depths in B-9 through B-15. Six of the sample locations were step out borings, and one was back in the source area to define the vertical extent of contamination. VOC compounds above the RCLs for groundwater were detected in borings B-9, B-12, B-13, and B-14; however, groundwater RCLs were not exceeded in the deeper samples. VOCs above the direct contact RCLs were detected in a laboratory sample from one of the fifteen borings SB-6 8-10 feet bgs with 1,2,4 – Trimethylbenzene above the standard. Given the depth of the sample, direct contact is not likely. The soil boring locations are shown in Figure 2. The soil sample results are summarized in Table 3. The laboratory analytical results are included in Appendix B.

- Environmental Media Potentially Affected. The soils on the site are affected in and around the former dry cleaning area. Indoor air is also affected in the same area. Groundwater was not encountered in the soil borings that were drilled on site. Perched groundwater was encountered in B-9 in a temporary one-inch well screen that was set, but did not generate enough water for a water sample.
- Need for Access Permission. Former Spic and Span owns the property on which the impacts were found.
- Potential Receptors. Based on investigations performed to date, potable water is supplied to the property from the City of Milwaukee. Based on the limited information available, it appears that there are buried private and public utilities located around the east, south, and north sides of the property. Water enters the site from the east side. A gas line enters the site from the east side of the property. There is overhead electric that comes onto the site from the south and east sides.

An eight-inch storm sewer runs under the north side of the building flowing to the west where connects with a larger main that flows to the south. This main is located west of the dry cleaning room. Based on field measurement of the pipe invert in the manhole located in the south parking lot of the building and standard design slopes for conveyance pipes, the depth of the stormwater pipe is estimated to be 8' to 14' below finish floor along the north side of the building and up to 18' to 19' where it exits the building to the south.

An eight-inch sanitary sewer runs from west to east through the center of the building with four to six-inch north-south laterals along its length. One of these laterals originates in the former dry cleaning room. The depth of this sewer is estimated to be approximately 10' below finish floor near SB-12 based on field measurements and standard design slopes for conveyance pipes.

- Significant Resources. Based on existing data, the site has not affected and does not present a threat to any threatened or endangered species, sensitive habitats, wetlands, resource waters, historical or archeological sites.
- Potential Remedial Actions. Potential remedial actions, if required, include natural attenuation, and engineering controls such as installing a venting system below the concrete slab in the area affected by the VOC soil contamination.

Details on the magnitude of soil impacts and the proposed remedial activities are provided in Sections 5.

4. Site History

The Subject Property contains a one-story vacant industrial building. The site was formerly a dry cleaning facility from 1961 to 2017. The current building was constructed circa 1951 by Square D. The site was undeveloped prior to that time.

5. Site Physiography and Geological Setting

The sampling strategy was developed to identify the soil impacts, based on the known site conditions and characteristics. The sampling locations were selected based on data obtained from utility maps of the site and the first round of environmental soil borings.

5.1. Surface Elevation and Topography

The topography of the Subject Property was reviewed on the Milwaukee County GIS page at: <http://io.milwaukeecounty.org/mcamlis/>. The site elevation is roughly 635 feet MSL and is relatively flat, generally sloping to the east. Surface drainage is generally to the east generally sloping toward the Milwaukee River.

5.2. Soil and Geology

According to the U.S. Department of Agriculture Soil Conservation Service, surficial material on the property is designated as unmapped area. However, the Subject Property and surrounding area appear to be urban land, covered mostly by buildings, parking lots, and streets. Urban land is material that has been manipulated, disturbed, or transported by human activities in the urban environment.

Based on review of the Evans, T.J., Massie-Ferch, K.M., and Peters, R.M. 2004, preliminary bedrock geology map of Walworth, Racine, Kenosha, Milwaukee, Waukesha, Ozaukee and Washington counties, Wisconsin: Wisconsin Geological and Natural History Survey, the Subject Property is underlain by Racine Formation of Silurian bedrock, consisting of medium to coarse grained dolomite.

5.3. Hydrology and Hydrogeology

There are no surface waters on the Subject Property. Other than storm sewers and local storm drains along the roadsides, the dominant surface water features in the area are the Milwaukee River at approximately 1000 feet to the northeast, and Lake Michigan, approximately 6.5 miles to the east of the Subject Property.

Water level observations were made during the tank removals on the south and west sides of the building. On the south side, water accumulated in the excavation at a depth of approximately 14 feet below ground surface (bgs). Water depths in monitoring wells on the west side ranged from 5 to 7 feet bgs. In both cases it is believed that the elevations are indicative of perched water conditions in clay soils.

Based on the location of Lake Michigan and based on the assumption that shallow groundwater flow often mimics local surface topography, shallow groundwater flow at the Subject Property is likely to the northeast towards the Milwaukee River and to the east towards Lake Michigan.

6. SITE INVESTIGATION

6.1. Soil Results

VOC compounds were detected at levels above the RCLs for groundwater in some of the samples collected from the soils in the north-central portion of the building interior near the former dry cleaning area. In the first round of soil sampling in borings (B-1 through B-8) several of the initial borings did not go deep enough to get beyond the contaminated soil.

Seven additional boring in the second round of sampling were drilled and sampled to deeper depths of 17.5 to 25.0 feet bgs (B-9 through B-15). Six of the sample locations were step out borings, and one was back in the source area to define the vertical extent of contamination. VOC compounds above the RCLs for groundwater were detected in borings B-9, B-12, B-13, and B-14 and these detects were limited to PCE and TCE in four of the samples. Groundwater RCLs were not exceeded in the deeper samples.

VOCs were not detected above the direct contact RCLs except for the sample from 8-10 feet bgs in SB-6 with Trimethylbenzene, 1,2,4 above the standard. This boring was completed in the area of the former petroleum solvent cleaning area that was located just west of the dry cleaning room.

The native soils on site consisted mainly of silty clay with few to traces of sand and gravel. Fill was encountered in most of the soil borings ranging from 3.0 to 20 feet bgs, sand, sand with gravel, sandy clay with pieces of brick, glass, metal, foundry sand, and silty sand with gravel (Milwaukee downtown fill). Lean clay was encountered in all the soil borings at various depths ranging from 6 to 20 feet bgs.

6.2. Groundwater Results

Groundwater was not detected in the first or second round of borings drilled at the site. Perched water was encountered in B-9 and a temporary well was installed in boring B-9 at depths of 25 feet bgs. The well did not generate enough water to collect a water sample. The water coming into the well could be from a clay layer with sand and gravel at the 20 to 21.5 foot interval.

6.3. Site Specific Clean-Up Levels

VOC compounds were detected at levels above the generic RCLs for groundwater in the soil samples in the area of the dry cleaning operations and adjacent areas in SB-1 through SB-8 and in the second round of step out samples in HA-1, B-9, B-12, and B-13. RCLs were not exceeded in any of the nine samples from deeper in the soil borings at depths in the native clay soils.

Not to exceed Direct Contact RCLs were exceeded in B-6 at 8.0 to 10.0 feet bgs with Trimethylbenzene, 1,2,4, however, given the depth to the contamination and that the area is covered with a concrete. Given the depth of the sample, direct contact risk is minimal.

The soil sample analytical results are summarized in Table 3.

6.4. Conclusions and Recommendations

The results of the Site Investigation indicate the depth of contamination is limited to approximately 20 feet below ground surface and does not extend significantly into the native clay soils. The contamination is limited to the area north of SB-11 and SB-10. Although the results from HA-1 and SB-9 indicated that there is some shallow spread to the north and west, the concentrations are significantly lower than in the source area and along the sanitary sewer line that slopes to the east. The spread along the storm sewer on the north side of the building is also apparently limited based on the drop in concentrations from SB-2

to SB-13, at the estimated depth of the storm sewer line. To the east, the PCE appears to have migrated along the sanitary sewer line. And as noted, the PCE detected in the soil vapor samples also indicate migration along the sanitary sewer line to the east.

Overall, there is no indication of a direct contact risk. The risk to groundwater also seems to be limited - soil samples from the deeper sampling intervals did not contain VOCs above the groundwater RCLs and groundwater was not encountered during the site investigation, the area is covered with a building and a concrete floor which limits infiltration, and there is not a drinking water risk because the site is on City of Milwaukee water.

Although the indoor air samples exceeded the Indoor Air Vapor Action Level, the highest concentration was approximately 0.0033 of the 2019 OSHA 8-hr. TWA, and given that the source is limited and will continue to vent and naturally degrade over time, the overall mass of contamination and potential concentrations in the indoor air will continue to decrease.

It is our opinion that the remaining element to investigate is the apparent migration of PCE to the east along the sanitary sewer line. The location and direction of this line is known as well as the approximate depth. Our recommendation is to continue the soil boring evaluation to the east along the sewer line with up to three additional borings.