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SCS ENGINEERS

October 25, 2016
File No. 25216186.00

Mr. Doug Cieslak
Wisconsin Department of Natural Resources
141 NW Barstow St, Room 180
Waukesha, WI 53188

Subject: Site Investigation Work Plan
Arctic Laundry & Cleaners (former)
5619 22nd Avenue, Kenosha, Wisconsin
BRRTS #02-30-245843

Dear Mr. Cieslak:

As requested, SCS Engineers (SCS) is providing the following work plan for soil, groundwater, and vapor assessment sampling for the Arctic Laundry & Cleaners project site located at 5619 22nd Avenue, Kenosha, Wisconsin (**Figure 1** and **Figure 2**).

BACKGROUND

Site History

The subject property was formerly operated as a dry cleaning facility and is located in an area of mixed commercial and residential properties. The property is occupied by a two story building with a basement, first floor commercial spaces, and second floor residential apartment.

According to the Wisconsin Department of Natural Resources (WDNR), spent dry cleaning solvent had been discharged behind (east of) the facility up until sometime in 1984. On May 4, 1994, the WDNR sent a "responsible party" letter to the property owner requiring investigation and cleanup of the spent solvent.

Soil and groundwater contamination, consistent with a dry cleaning solvent release, was identified during investigation activities performed by Sigma Environmental Services, Inc. (Sigma) in August 1994. Sigma's initial work included installation and sampling of one direct push soil boring (GP-1). The extent of the contamination was further delineated by Sigma in October 1995 by installing and sampling five additional direct push soil borings (GP-2 through GP-6). Sigma's boring locations are shown on **Figure 2**.

Investigation findings were summarized in Sigma's reports dated October 26, 1994 and December 14, 1995. Sigma reported that chlorinated volatile organic compounds (CVOCs) were detected in soil and/or groundwater to the east and north of the subject property building.

Previous Investigation Results

During the Sigma investigations, CVOCs, including tetrachloroethene (PCE) and cis-1, 2-dichloroethylene (cis-1,2-DCE) were detected in soil at concentrations up to 2,700 micrograms per kilogram. Only PCE exceeded an NR 720 residual contaminant level (RCL) and this was for the groundwater pathway RCL. CVOC soil concentrations did not exceed direct contact RCLs.

CVOCs including PCE, trichloroethene (TCE), and cis-1,2-DCE were detected in groundwater at concentrations up to 50 micrograms per liter. Only PCE was detected in excess of an NR 140 enforcement standard.

Hydrogeology

Based on Sigma's soil boring logs, soils at the site generally include a few feet of silty clay overlying a silty sand, which extends to a depth of at least 17 feet below ground surface (bgs).

Groundwater was present during the Sigma investigations at a depth of approximately 9 feet bgs. The direction of shallow groundwater flow in the vicinity of the site is variable based on information available through the WDNR's Geographical Information System (GIS) Registry of closed remediation sites.

Well constructor reports available on the Wisconsin Department of Agriculture, Trade and Consumer Protection online database show unconsolidated soils extend in the vicinity of the site to depths over 100 feet bgs where limestone bedrock is encountered.

PROPOSED INVESTIGATION

The following scope of work is proposed in order to further delineate the extent of soil and groundwater contamination and to assess for vapor intrusion of CVOCs into the subject property building.

Soil and Groundwater Investigation

- Install three direct push borings to 15 feet bgs and collect two soil and one groundwater sample per boring for laboratory analysis of volatile organic compounds (VOCs). A photoionization detector (PID) will be used to field test the soil for the presence of VOCs. Soil samples will be collected for laboratory analysis based on PID readings and visual observations.

- Install, develop, and perform one round of groundwater sampling for three NR 141 groundwater monitoring wells, constructed to 15 feet bgs. The wells will be installed in three additional borings using a direct push drilling rig equipped with augers. Soil samples will be collected from each boring as noted above and then augers will be used to construct the wells. Water elevations will be recorded prior to sampling the three wells.

- Submit all soil and groundwater samples to a state-certified laboratory for VOC analysis.

Vapor Assessment

Vapor assessment sampling will be conducted consistent with the WDNR's RR-800 and RR-986 guidance documents. The following work will be performed.

- Collect one indoor air sample from each level of the subject property building (basement, first floor, second floor).
- Collect one outdoor air background sample.
- Install and sample three sub-slab vapor probes in the building basement and collect one round of samples. The probes will be left in place for additional sampling, if necessary.
- Submit all vapor assessment samples to a state-certified laboratory for analysis of PCE, TCE, cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride.

REPORTING

The report will summarize the results of the investigation and include the following:

- Summary of investigation methods, findings, and recommendations
- Soil, groundwater, and vapor analytical summary tables with applicable standards
- Maps showing site location, site plan with site features, and sample locations
- Groundwater flow map
- Laboratory analytical reports
- Boring logs, borehole abandonment forms, well construction forms, and well development forms

INVESTIGATION WASTE MANAGEMENT PLAN

Soil cuttings and water used for equipment decontamination, and monitoring well development and purge water, will be contained on site, in U.S. Department of Transportation-approved 55 gallon drums for future disposal, as appropriate.

SCHEDULE

We anticipate conducting the initial site investigation activities outlined in this work plan in November or December 2016. After receiving the analytical results from the initial activities, we will evaluate the need for additional investigation.

Please feel free to contact Robert Langdon at (608) 216-7329 if you have any questions or comments concerning our proposed program.

Sincerely,

Robert Langdon
Senior Project Manager
SCS ENGINEERS

Ray Tierney, PG
Vice President
SCS ENGINEERS

REL/jsn/RT

cc: Roy Baietto
Paul Kent, Stafford Rosenbaum LLP (ecopy)

Attachments: Figure 1 – Site Location Map
Figure 2 – Site Plan

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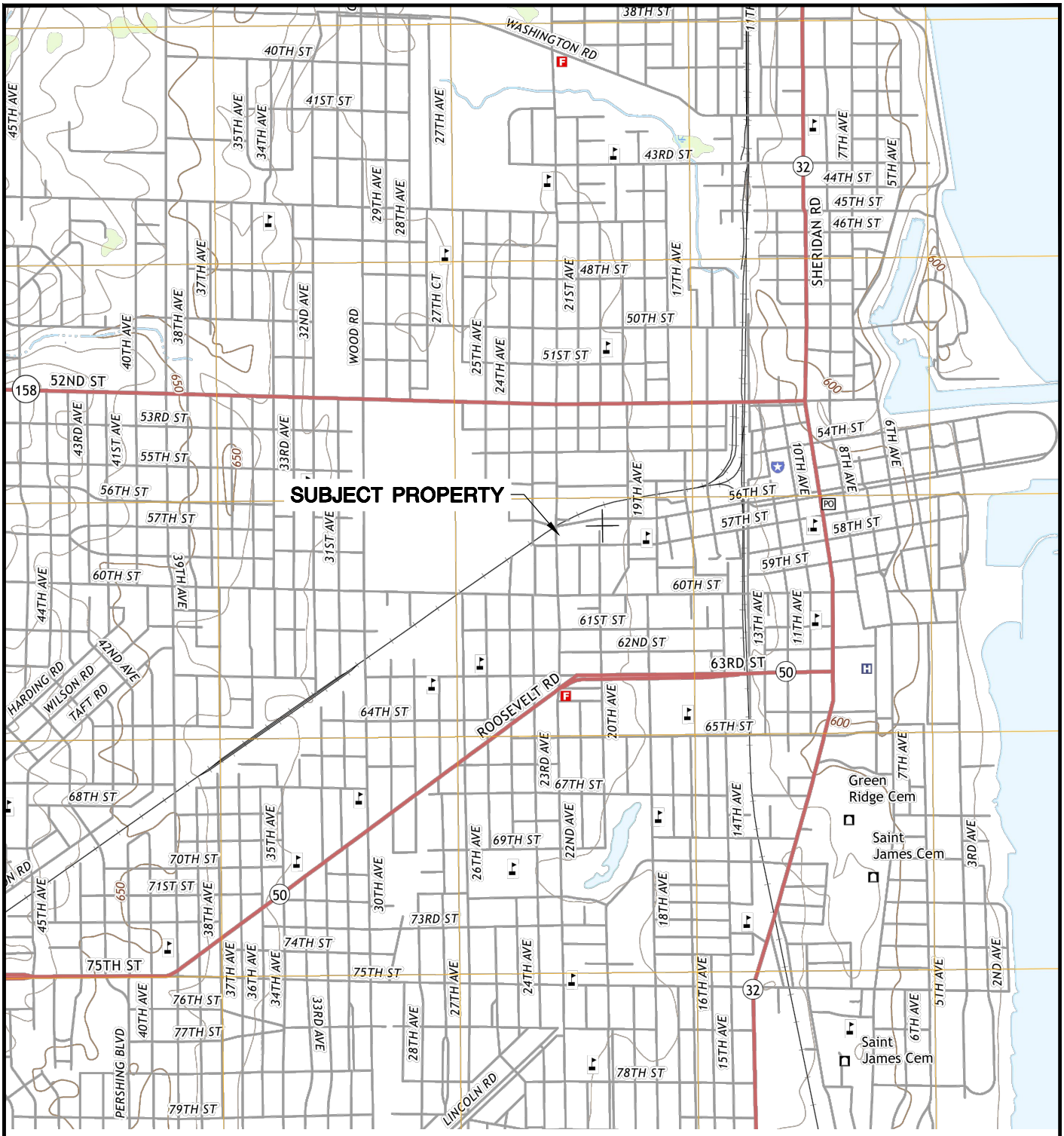
FIGURES



N

KENOSHA QUADRANGLE
WISCONSIN–KENOSHA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
7.5' QUADRANGLE
2016
SCALE: 1" = 2,000'

CLIENT	STAFFORD ROSENBAUM, LLP. 222 WEST WASHINGTON AVENUE MADISON, WI 53701	SITE	ARCTIC LAUNDRY AND CLEANERS 5619 22ND AVENUE KENOSHA, WISCONSIN

SITE LOCATION MAP

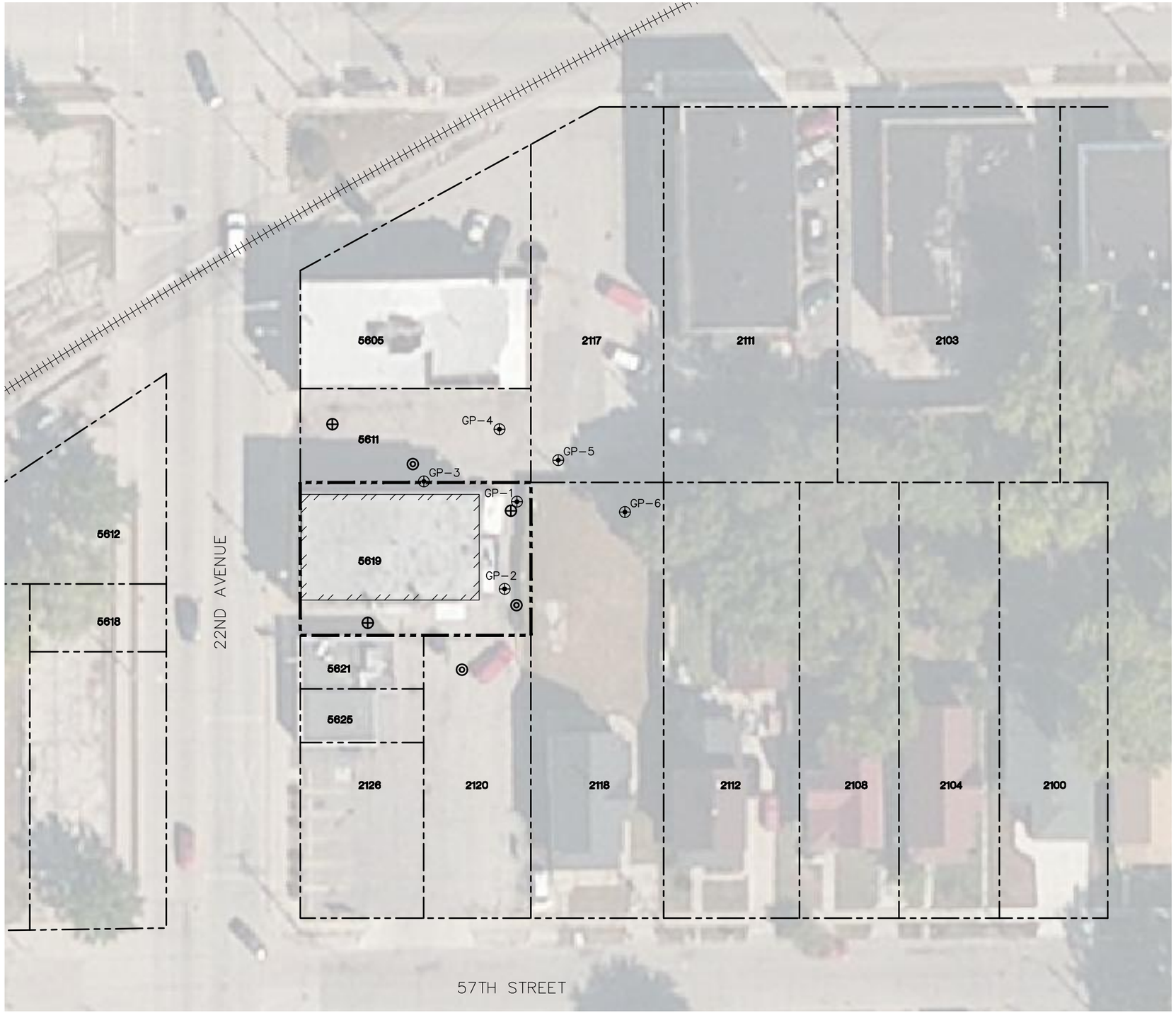
PROJECT NO.	25216186.00	DRAWN BY:	KP
DRAWN:	10/21/16	CHECKED BY:	REL
REVISED:	10/21/16	APPROVED BY:	REL 10/24/16

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718–6751
PHONE: (608) 224–2830

FIGURE
1

I:\25216186.00\Drawings\Site Location.dwg, 10/25/2016 7:02:44 AM



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LEGEND

- APPROXIMATE PROPERTY LINE (5619 22ND AVENUE)
- APPROXIMATE PROPERTY LINE
- 5619 PROPERTY ADDRESS NUMBER
- RAILROAD TRACKS
- EXISTING GEOPROBE BORING
- PROPOSED SOIL BORING
- PROPOSED MONITORING WELL

40 0 40

SCALE: 1" = 40'

SITE PLAN

ARCTIC LAUNDRY AND CLEANERS
5619 22ND AVENUE
KENOSHA, WISCONSIN

SITE

STAFFORD ROSENBAUM, LLP.
222 WEST WASHINGTON AVENUE
MADISON, WI 53701

CLIENT

FIGURE 2

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

DRAWN BY:	KP	
CHECKED BY:	REL	
APPROVED BY:	REL	10/24/16
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