Quarterly Groundwater Monitoring Status Report

(2nd Sampling)

January 10, 2018

Prepared For:

Westwood Cleaners
(WDNR BRRTS#02-41-552537)
8731 West North Avenue
Wauwatosa, Wisconsin 53226

Prepared By:

Hydrodynamics Consultants, Inc.
5403 Patton Drive, Suite 215
Lisle, Illinois 60532

January 10, 2018

Jennifer Dorman, Environmental Program Associate
Wisconsin Department of Natural Resources
2300 Martin Luther King Drive
Milwaukee, WI 53212

Re: Quarterly Groundwater Monitoring Status Report (2nd Sampling)
WDNR BRRTS #02-41-552537, Westwood Dry Cleaners
8731 W. North Ave, Wauwatosa, WI 53226

Dear Ms. Dorman:

Hydrodynamics Consultants, Inc. (HDC) is pleased to submit this Quarterly Groundwater Monitoring Status Report (2nd Sampling) for your review and approval. The sampling activity is part of the scope of work in the approved site investigation plan. The protocols and procedure previously submitted by HDC and reviewed by WDNR were followed.

On September 16, 2018, HDC, Inc. crew members used GeoProbe systems to collect soil samples (NSB1-NSB12) from in and around the subject property. On the same day a sub-slab vapor sample from SV3 was completed. Groundwater monitoring well sampling (from MW1-MW6) and the remainder of the sub-slab vapor sampling (SV1, SV2, SV4, and SV5) took place during a second site visit on September 19, 2018.

To monitor the groundwater quality and flow pattern changes, on December 18, 2018, HDC, Inc. crew collected groundwater samples from all the existing monitoring wells MW1-MW6 (for 2nd Sampling). The results of the groundwater analyses are included in Table 1. The laboratory analytical results have also been attached. Figure 2 is a diagram showing the locations of any VOCs that have exceeded the screening levels.

Drycleaning solvent, tetrachloroethene (PCE) and its degraded byproducts, such as trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and vinyl chloride (VC) have been detected as a result of this quarterly sampling activity. Groundwater samples confirm that up to 78 µg/L of PCE, 140 µg/L of TCE, 29 µg/L of DCE and 25 µg/L of VC has been detected. The Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard and Preventive Action Limit have been exceeded.

HDC appreciates your supports on this project. If you have any questions concerning this report, please feel free to contact me: Mike_Wan@HydrodynamicsConsultants.com or 630-724-0098.

Certifications

I, Mike (Minghua) Wan, 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 Wis. Adm. Code."

Mike (Minghua) Wan, PE
Maple Testing Services, Inc. D/B/A Hydrodynamics Consultants, Inc.

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1.0 EXECUTIVE SUMMARY

Hydrodynamics Consultants, Inc. (HDC) is pleased to submit this Quarterly Groundwater Sampling Status Report (2nd Sampling) for your review and approval. The sampling activity is part of the scope of work in the approved Site Investigation Plan. The protocols and procedure previously submitted by HDC and reviewed by WDNR were followed.

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To monitor the groundwater quality and flow pattern changes, on December 18, 2018, Hydrodynamics Consultants, Inc. crew collected groundwater samples from all the existing monitoring wells MW1-MW6 (for 2nd Sampling). The results of the groundwater analyses indicate that drycleaning solvent, tetrachloroethene (PCE) and its degraded byproducts, such as trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and vinyl chloride (VC) remain at this site. Groundwater samples confirm that up to 78 µg/L of PCE, 140 µg/L of TCE, 29 µg/L of DCE and 25 µg/L of VC remain at this wells. The Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard and/or Preventive Action Limit have been exceeded.

By comparing the 1st and 2nd groundwater sampling results, it appears that the cVOC concentrations in the groundwater samples are steady, except for that the PCE concentrations in MW5 and MW6 may have partially degraded to TCE. There is slight increase of PCE in MW2 (from 6.3 µg/L to 12 µg/L). No cVOC is present in monitoring wells, MW1, MW3, and MW6, with concentrations exceeding the enforcement standard and/or preventive action levels as stimulated in NR 140.

Based on the sampling results, HDC recommends completion of another quarterly groundwater sampling. After the next quarterly sampling is completed, further site investigation or remediation options can be evaluated.

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2.0 INTRODUCTION

2.1 Location and Project Information

1. Site Owner:
   Dong Sin
   8371 West North Avenue
   Wauwatosa, WI 53226

2. Site Address:
   8371 West North Avenue
   Wauwatosa, WI 53226

3. Site Location (Figure 1):
   NE ¼ of the NW ¼ of Section 21, T07N, R21E, Milwaukee County, Wisconsin.

4. Environmental Consultant:
   Mike Wan, PE, Project Manager
   Hydrodynamics Consultants, Inc.
   5403 Patton Drive, Suite 215
   Lisle, IL 60532
   Tel. 630-724-0098
   Email Mike_Wan@HydrodynamicsConsultants.com

5. WDNR BRRS#:
   02-41-552537

6. WDNR Project Manager:
   Binyoti Amungwafor
   Wisconsin Department of Natural Resources
   2300 Martin Luther King Drive, Milwaukee, WI 53212
   Tel. 414-263-8607
   Email: Binyoti.Amingwafor@Wisconsin.gov

2.2 Site Location Map

Please see attached Figure 1, Site Vicinity Map

2.3 Site Physiographical and Geological Information

2.3.1 Topography/Geology

The general topography of land is flat with an elevation of approximately 705 feet above mean sea level (MSL). The local ground surface slopes gently toward the west or southwest.

No bedrock is encountered in the borings. According to the Glacial Deposit Map compiled by Wisconsin Geological & Natural History Survey in 1976, the site is located on the End Moraine deposit. The thickness of the glacial deposit is between 50' and 100' according to the Glacial Depth to Bedrock Map compiled by L.C. Trotta and R. D. Otter in 1973.

The closest surface water body is the Menomonee River which is approximately 1,600 feet to the west or southwest of the subject property.

The subsurface soil encountered in the soil borings is predominantly clay to silty clay from the surface down to the end of the borings at 16' below the ground surface, with thin lenses of silty fine sand/gravel being present in some borings.

2.3.2 Hydrogeology

The site is located in the City of Wauwatosa where the ground surface is mostly covered with asphalt pavement or concrete. Surface water drains to the municipal storm water system through the manhole sumps in the parking lots and storm water grills along the edges of streets. Surface water may recharge to the groundwater table via infiltration in landscape areas or open fields where no surface barrier is present. The subject property is mostly covered with asphalt pavement or concrete slabs except for the lawn covered area to the west of the strip mall building. The groundwater study conducted through the monitoring wells at this site discovered that the local groundwater flows generally to the west or southwest, with high hydraulic conductivity as detailed in later sections of this report. The regional groundwater table may slightly slope to the west or southwest and discharge into the Menomonee River system located about 1,600 ft. southwest of the site. This water surface elevation at Menomonee River channel is about 656' above the mean sea level (or about 49' below the concrete floor at Westwood Cleaners.

2.4 Background Information

The subject property is located on the southeast corner of the intersection of West North Avenue and North Ludington Avenue in the City of Wauwatosa, WI (See Site Vicinity Map, Figure 1).

According to our inquiry, the subject dry-cleaning plant has been operating there since 1985. Drycleaning solvent, tetrachloroethene or perchloroethene (perc or PCE) has been used and stored at this site since 1985. Prior to 1985, no known record indicates that the site had been involved with any hazardous materials. Therefore, PCE and its degraded compounds (such as trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC) (called chlorinated volatile organic compounds, cVOCs) are the only contaminants of concern (COCs) for this site. Based on our observation and inquiries of the owner, the subsurface contamination of PCE may have been from historical spills or incidental releases during the past drycleaning operation. Further PCE release is

unlikely because the drycleaning facility has installed secondary containments under the drycleaning machine and attention has been paid to proper storage and handling of the drycleaning generated wastes.

Hydrodynamics Consultants, Inc. (HDC) completed a preliminary site investigation on August 19, 2008. HDC performed limited soil boring and testing at the subject property to confirm the site conditions. Four (4) soil borings (SB1 to SB4) were advanced to a depth of 16' each boring and two soil samples were collected from each boring for laboratory analysis of volatile organic compounds (VOCs). The analytical results indicated the drycleaning solvent, tetrachloroethene and its degraded products are present at the site. Based on the laboratory analysis from samples collected from these 4 borings, up to 320 mg/kg of PCE was present in the borings (See Figure 3 Soil cVOC Distribution Map).

Based on the initial site inspection, HDC believes that the contamination is related to unknown incidental spills or releases of perchloroethene near the drycleaning machine and waste drums. Other similar incidents may also have taken place near the back door through which the drycleaning solvent was delivered and waste solvent drums were removed. The drycleaner owner has implemented secondary storage containers under the potential source containers in order to minimize the impact of any incidental releases or spills. It appears that this dry-cleaner operation is in compliance with all the regulatory requirements.

On August 7, 2018 the Wisconsin DNR approved HDC's Site Investigation Work Plan (SIWP), which was submitted in order to gain approval to conduct an Additional Site Investigation.

On September 16, 2018, HDC, Inc. crew members used GeoProbe systems to collect soil samples (NSB1-NSB12) from in and around the subject property. On the same day a sub-slab vapor sample from SV3 was completed. Ground water sampling (MW1-MW6) and the remainder of the sub-slab vapor sampling (SV1, SV2, SV4, and SV5) took place during a second site visit on September 19, 2018.

The analytical results of the soil, groundwater, and sub-slab vapor have been reported in the Site Investigation Report previously submitted to the DNR. Based on the analytical results, the contaminants of concern (COCs) found at this site are tetrachloroethene (PCE) and its degraded compounds, such as trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), and/or vinyl chloride (VC).

The Site Investigation Report confirmed that up to 320,000 µg/Kg of PCE has been found in soil samples which exceed the Soil to Groundwater Pathway Residual Contaminant Level (RCL) of 4.5 µg/Kg and non-Industrial Direct Contact RCL of 30,700 µg/kg. Up to 3,970 µg/Kg of TCE has been found in soil samples which exceed the Soil to Groundwater Pathway RCL of 3.6 µg/Kg and non-Industrial Direct Contact RCL of 1,260 µg/Kg. No other cVOC was found in the soil samples with concentrations higher than the RCLs.

Groundwater samples results in the Site Investigation Report indicate that up to 160 µg/L of PCE, 70 µg/L of TCE, and 38 µg/L of VC are present which exceeded the Enforcement Standards (ES) and Preventive Action Limits (PAL) published in Wisconsin Administrative Code, Chapter NR 140.

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Also, up to 26 µg/L of cDCE was found in the groundwater samples that exceeded the Preventive Action Limits.

As a result of the sub-slab vapor sampling in the Site Investigation Report, PCE (up to 1,200 µg/m³) and TCE (up to 4.2 µg/m³) have been found with concentrations exceeding both the residential and commercial Indoor Air Vapor Action Levels. However, all the cVOCs found in the vapor samples are below the US EPA's Vapor Risk Screening Levels (VRSL) for sub-slab vapor samples which are applicable to the sample results.

To monitor the groundwater quality and flow patterns, the second groundwater sampling was completed on December 18, 2018. This report will provide an update on the second groundwater sampling results.

The surrounding properties or store spaces have been used for commercial purposes without known involvement of any hazardous materials, except for petroleum products. Based on the ERRTS databases, a gasoline filling station is present on the northwest corner of the intersection of North Avenue and Ludington Avenue (8806 W North Avenue, WDNR BRRTS#: 03-41-100572). The gasoline station site was conditionally closed with proper GIS Registry. The property at 8901 West North Avenue, on the southwest corner of the intersection of North Avenue and Ludington Avenue (WDNR BRRTS#: 03-41-563748), was also used as a gasoline filling station. Petroleum release was found in that property. No further information was readily available for review.

There is no known risk at this time from the released cVOCs to the public health, safety, welfare, or the environment.

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3.0 QUARTERLY GROUNDWATER MONITORING (2nd Sampling) RESULTS

3.1 Quarterly Groundwater Sampling Outline

On December 18, 2018, Hydrodynamics Consultants, Inc. (HDC) crew members preformed the 2nd round of ground water sampling from monitoring wells, MW1 to MW6. Please refer to the attached site map (Figure 2) for sampling locations.

During groundwater sampling, the following procedures are adhered to:

- Prior to groundwater sampling, the wells are measured with a water level indicator, and then purged with a designated disposal bailer for 3 times of the well volume or until they are mostly dry.
- When sufficiently recharged, a groundwater sample was then retrieved, with a designated PVC bailer equipped with a Teflon ball check valve at the bottom, from the well.
- Each groundwater sample retrieved was dispensed through a small PVC tube inserted in the bottom of the bailer into two 40-ml glass vials containing a HCL preserve.
- The sample containers are closed with Teflon-lined lids.
- After the vials are filled with water samples, we check to see if the vials are free of bubbles by holding the vials upside down. If bubbles are found, a new groundwater sample is collected from the well.
- Upon completion, groundwater samples are immediately stored in an ice-chilled cooler.

Proper decontamination procedures are followed during the groundwater sampling activities. A new PVC bailer is designed for each groundwater monitoring well. A new pair of gloves is used for collecting each groundwater sample. The water table indicator and tools are cleaned with soapy water and rinsed thoroughly before each use.

The Chain of Custody documentation is strictly adhered to during the groundwater sampling activities and during the delivery of the groundwater samples from the field to the laboratory.

During the field sampling activities, a waterproof pen is used to mark each groundwater sample container. The information marked on the sample containers includes, but is not limited to, the sample date and time, the sample identification, the sample locations, and any other applicable data.

All samples are generally picked up by an analytical laboratory on the next working day. Before they are picked up, they are stored in a cooler with ice packs. The cooler is stored in our refrigerator, which is set to 4ºC. Collected groundwater samples are analyzed by Stat Analytical Corporation which is a laboratory accredited by WDNR.

A trip blank (MW-TB), and a duplicate sample from MW6 (MW6-2D), and a temperature blank are included with each groundwater sampling event. However, these samples are only analyzed when required.

Trip blanks are submitted for laboratory analysis to assess for potential contamination during handling, shipment, and storage of the investigative samples. Trip blanks are filled by the analytical laboratory with organic-free water and are kept with the investigative water samples throughout the field event. Field duplicate samples are collected for each investigative matrix (soil gas, sub-slab vapor, ambient air, indoor air, groundwater, and/or soil) as associated investigative samples. Field duplicate samples are processed, stored, packaged, and analyzed by the same methods as the other samples.

Decontamination water use is kept to a minimum, and typically 5-10 gallons of rinsate water is generated. The decontamination water is disposed on-site by evaporation over a hard surface.

3.2 Quarterly Groundwater (2nd) Sampling Results

A total of 8 groundwater samples, including 1 duplicate from MW6 and 1 trip blank, were analyzed for VOCs in accordance with USEPA Publication SW-846, Method 5035/8260B. The groundwater analytical results obtained are tabulated in Table 1. The groundwater COC distribution in the wells is illustrated in Figure 4. By comparing to the Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard and Chapter NR 140 Preventive Action Limits, the following compounds are deemed as the contaminants of concern based on the groundwater sampling results.

Tetrachloroethene (PCE): up to 69 µg/L (78 µg/L in MW6-2D) of PCE was detected from various wells, which exceeded the groundwater Enforcement Standard (5 µg/l) and Preventive Action Limit as defined in the NR 140.

Trichloroethene (TCE): up to 140 µg/L of TCE was detected from various wells, which exceeded the groundwater Enforcement Standard (5 µg/l) and Preventive Action Limit as defined in the NR 140.

Cis-1,2-Dichloroethene (cDCE): up to 29 µg/L of DCE was detected from various wells, which exceeded the Preventive Action Limit as defined in the NR 140.

Vinyl Chloride (VC): up to 25 µg/L of VC was detected from various wells, which exceeded the groundwater Enforcement Standard (0.2 µg/l) and Preventive Action Limit as defined in the NR 140.

The groundwater sampling results confirmed that the groundwater quality have been impacted by the released PCE and its degraded compounds of TCE, cDCE, and VC at this site.

No contaminant was found in MW1, MW3, or MW4. In addition, no contaminant was detected in the trip blank sample, MW-TB.

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The duplicated sample from monitoring well MW6 (MW6-2D) contained similar concentrations of PCE, TCE, cDCE, and VC which confirmed the sampling and analysis process is accurate and reliable.

Bromodichloromethane (1.4 µg/L) and chloroform (1.3 µg/L) were also detected in samples collected in MW2 with concentrations exceeding the Enforcement Standard and/or Preventive Action Limits as shown in Chapter NR 140. However, these two chemicals may not come from the drycleaning operation since only tetrachloroethene (PCE) has been used by Westwood Cleaners. Based on our research on the internet, bromodichloromethane is mainly from fire extinguishing agent or water disinfection by chlorination, while the chloroform is mainly from precursors for manufacturing refrigerants or polytetrafluoroethylene (PTFE, or Teflon). Therefore, they may come from other unknown contamination sources, which are not contaminants of concern for this site.

3.3 Quarterly Groundwater Table Elevation Monitoring Results

Prior to any groundwater disturbance, on December 18, 2018, we conducted a water-table survey for monitoring wells MW1 through MW6. The top of the well casing of monitoring well MW6 was chosen as a survey reference point and assumed to be 100.00 feet site datum elevation. The relative elevation of the top of well casing for each well was then determined by level shooting and the distances between wells were directly measured using a wheel measure. The relative water-table elevation survey data can be summarized in Table 2.

A water table contour map for the relative water-table elevations is constructed as shown in Figure 4. The groundwater flow trend is generally to the west with a converging factor toward MW5 and MW6 at this site. Groundwater from this site may discharge to the Menomonee River basin located approximately 1,600’ southwest of the site. According to Google Earth map, the water surface elevation at the Menomonee River is about 40’ below the water table found at Westwood Cleaners site.

This groundwater table slope coincides with the local topography.

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Table 2 Relative Water Table Elevation

Well Number	Elevation of Well Casing (ft.)	Water Depth (ft.) 09/19/2018	Water Depth (ft.) 12/18/2018	Groundwater Table Elevation (ft.) 9/19/2018	Groundwater Table Elevation (ft.) 12/18/2018
MW1	98.49	8.72	9.55	89.77	88.94
MW2	99.12	8.97	8.35	90.15	90.77
MW3	100.76	10.23	10.06	90.53	90.7
MW4	98.88	8.44	8.15	90.44	90.73
MW5	99.95	9.61	9.89	90.34	90.06
MW6	100	9.76	9.89	90.24	90.11

Note: The top of casing at MW6 is used as 100.00 reference datum.

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4.0 CONCLUSIONS AND RECOMMENDATIONS

To monitor the groundwater quality and flow pattern changes, on December 18, 2018, Hydrodynamics Consultants, Inc. crew collected groundwater samples from all the existing monitoring wells MW1-MW6 (2nd Sampling). The results of the groundwater analyses indicate that drycleaning solvent, PCE and its degraded byproducts, such as trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and vinyl chloride (VC) remain at this site. Groundwater samples confirm that up to 78 µg/L of PCE, 140 µg/L of TCE, 29 µg/L of DCE and 25 µg/L of VC has been detected. The Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard and/or Preventive Action Limit have been exceeded.

By comparing the 1st and 2nd groundwater sampling results, it appears that the cVOC concentrations in the groundwater samples are steady, except for that the PCE concentrations in MW5 and MW6 may have partially degraded to TCE. There is slight increase of PCE in MW2 (from 6.3 µg/L to 12 µg/L). No cVOC is present in monitoring wells, MW1, MW3, and MW6, with concentrations exceeding the enforcement standard and/or preventive action levels as stimulated in NR 140.

The groundwater flow trend is still toward the west or southwest.

Based on the sampling results, HDC recommends completion of another quarterly groundwater sampling. After the next quarterly sampling is completed, further site investigation or remediation options can be evaluated.

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5.0 CLOSING REMARKS

The environmental assessment detailed in this report has been performed in accordance with generally accepted methods and practices of the environmental profession. The findings obtained in this project are believed to be reliable to the extent possible for the information gathered and for the scope and intent of the work mutually agreed upon by the client and HDC. HDC does not make any warrantee or guarantee, expressly or implied, to conditions that could not be considered in our report, because the conditions were not readily available, hidden, or not disclosed to our inquiries and investigations.

HDC appreciates the opportunity to be of service to you on this project. If you have any questions concerning this report, please feel free to contact my office.

Prepared by:

Mike (Minghua) Wan, PE
Senior Engineer

Reviewed by

Yong Yu, Ph.D.
Senior Project Manager

Maple Testing Services, Inc.
D/B/A Hydrodynamics Consultants, Inc.

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TABLES

Table 1 Groundwater VOC Analytical Results

Monitoring Well ID	Sample Date	Depth To Water (ft.)	Bromodichloromethane	Chloroform	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
NR 140 ES (µg/L)			***0.6***	*6*	*70*	***5***	***5***	***0.2***
NR 140 PAL (µg/L)			***0.06***	***0.6***	***7***	***0.5***	***0.5***	***0.02***
MW1	09/19/2018	8.72	< 5	< 5	< 5	< 5	< 5	< 2
	12/18/2018	9.55	< 5	< 5	< 5	< 5	< 5	< 2
MW1-D	09/19/2018	---	< 5	< 5	< 5	< 5	< 5	< 2
MW2	09/19/2018	8.97	< 5	**1.5 J**	**0.69**	**6.3**	< 5	< 2
	12/18/2018	8.35	**1.4**	**1.3**	< 5	**12**	< 5	< 2
MW3	09/19/2018	10.23	< 5	< 5	< 5	< 5	< 5	< 2
	12/18/2018	10.06	< 5	< 5	< 5	< 5	< 5	< 2
MW4	09/19/2018	8.44	< 5	< 5	< 5	< 5	< 5	< 2
	12/18/2018	8.15	< 5	< 5	< 5	< 5	< 5	< 2
MW5	09/19/2018	9.61	< 5	< 5	**26**	**160**	**70**	**38**
	12/18/2018	9.89	< 5	< 5	**29**	**66**	**140**	**25**
MW6	09/19/2018	9.76	< 5	< 5	**8.6**	**110**	**11**	**3.3**
	12/18/2018	9.89	< 5	< 5	**17**	**69**	**36**	**2.2**
MW6-D	12/18/2018	9.89	< 5	< 5	**13**	**78**	**41**	**2.4**
MW-TB	09/18/2018	---	< 5	**0.75 J**	< 5	< 5	< 5	< 2
	12/18/2018	---	< 5	< 5	< 5	< 5	< 5	< 2

Notes:

NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard

NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit

NS = No Standard

Sample ID with " - D" and "TB" refer to duplicate and trip blank, respectively

J - Analyte detected below reporting limit

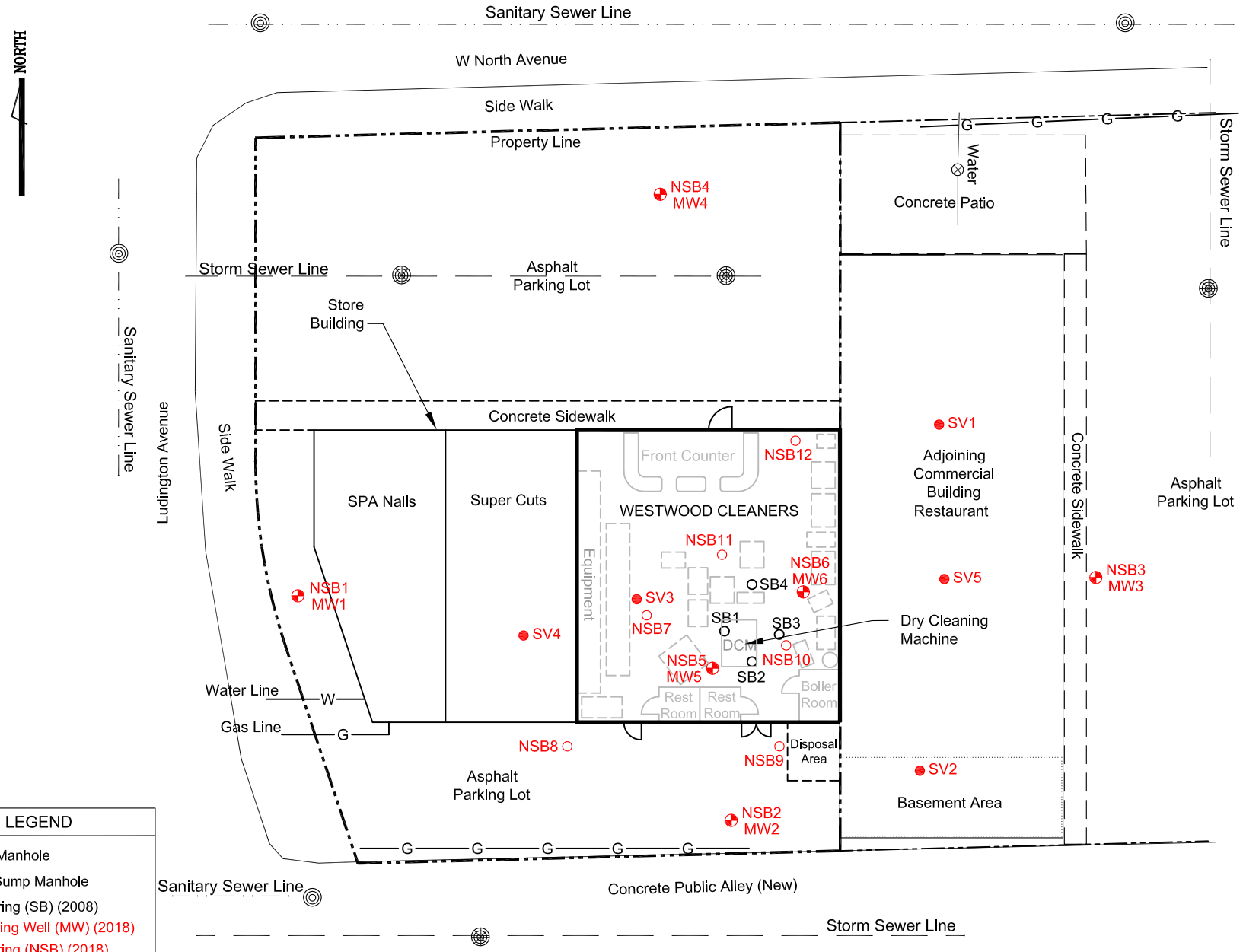
All values in mg/L or ppm

Bold fonts/Shaded boxes indicate the levels exceed the Quality Standards.

FIGURES

Figure 1 Site Vicinity Map

WDNR BRRTS #02-41-552537/Milwaukee County
Westwood Cleaners
8751 W. North Avenue, Wauwatosa, WI 53226



LEGEND
Sewer Manhole
Storm Sump Manhole
Soil Boring (SB) (2008)
Monitoring Well (MW) (2018)
Soil Boring (NSB) (2018)
Soil Vapor Sample (SV) (2018)

SITE NAME	Westwood Dry Cleaners (#02-41-552537)	FIGURE NO.	2
FIGURE NAME	Site Map with Utility Lines		
ADDRESS	8731 West North Avenue, Wauwatosa, WI 53226		

SCALE

0 25' 50'

HYDRODYNAMICS CONSULTANTS, INC.

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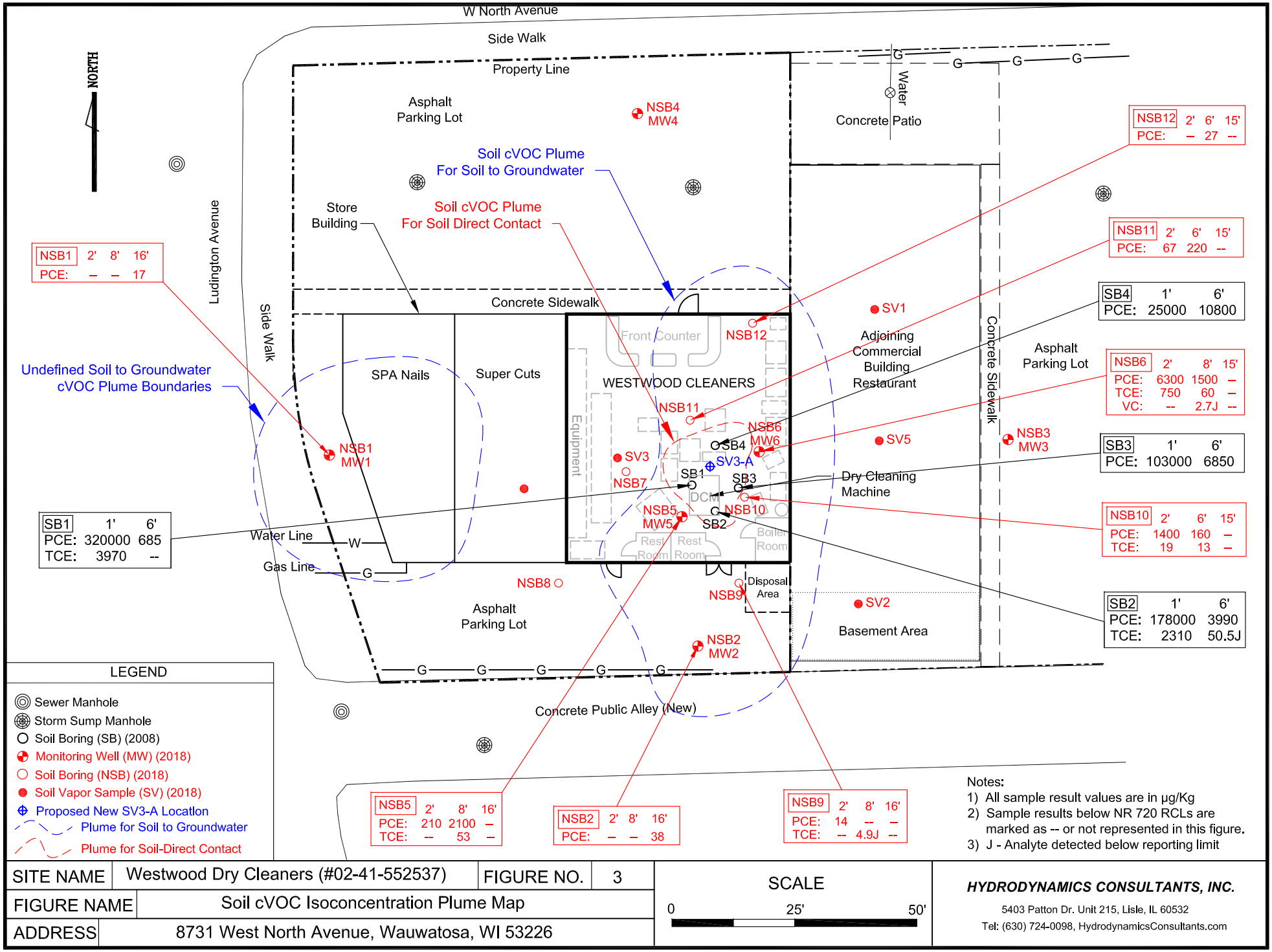
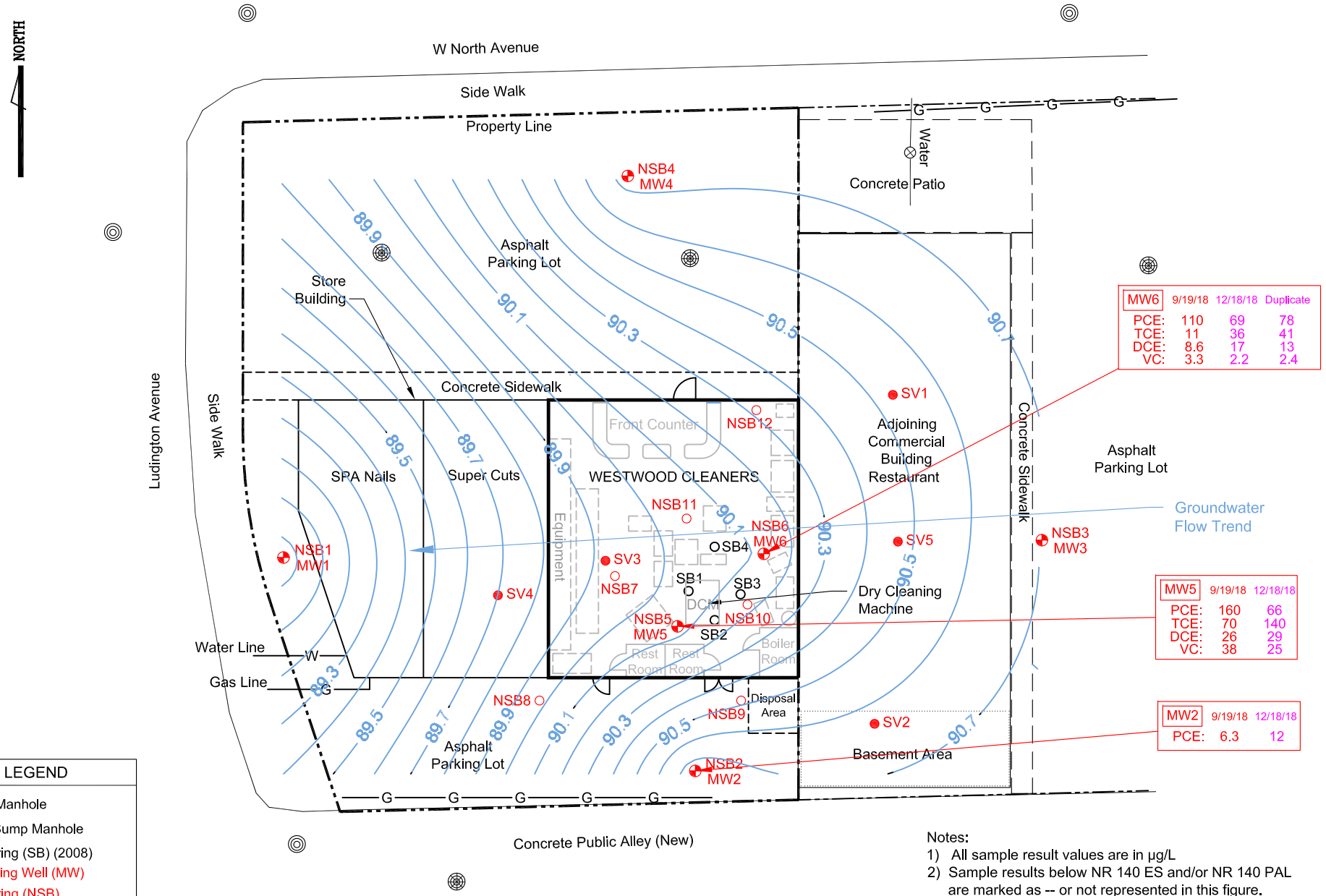

W North Avenue
Side Walk
Property Line
NORTH
Asphalt Parking Lot
NSB4 MW4
Water
Concrete Patio
Soil cVOC Plume For Soil to Groundwater
Soil cVOC Plume For Soil Direct Contact
Store Building
Ludington Avenue
Side Walk
Concrete Sidewalk
NSB1 2' 8' 16'
PCE: – – 17
Undefined Soil to Groundwater cVOC Plume Boundaries
NSB1 MW1
SPA Nails
Super Cuts
Front Counter
NSB12
WESTWOOD CLEANERS
NSB11
NSB6 MW6
SB4
SV3
SV3-A
SB1
SB3
NSB7
DCM
NSB5 MW5
NSB10
SB2
Equipment
Rest Room
Rest Room
Boiler Room
SV1
Adjoining Commercial Building Restaurant
SV5
Dry Cleaning Machine
Asphalt Parking Lot
Concrete Sidewalk
NSB3 MW3
NSB12 2' 6' 15'
PCE: – 27 --
NSB11 2' 6' 15'
PCE: 67 220 --
SB4 1' 6'
PCE: 25000 10800
NSB6 2' 8' 15'
PCE: 6300 1500 –
TCE: 750 60 –
VC: -- 2.7J --
SB3 1' 6'
PCE: 103000 6850
NSB10 2' 6' 15'
PCE: 1400 160 –
TCE: 19 13 –
SB2 1' 6'
PCE: 178000 3990
TCE: 2310 50.5J
SB1 1' 6'
PCE: 320000 685
TCE: 3970 --
Water Line
W
Gas Line
G
NSB8
NSB9
Disposal Area
SV2
Basement Area
Asphalt Parking Lot
NSB2 MW2
Concrete Public Alley (New)
NSB5 2' 8' 16'
PCE: 210 2100 –
TCE: -- 53 –
NSB2 2' 8' 16'
PCE: – – 38
NSB9 2' 8' 16'
PCE: 14 -- –
TCE: -- 4.9J --
LEGEND
Sewer Manhole
Storm Sump Manhole
Soil Boring (SB) (2008)
Monitoring Well (MW) (2018)
Soil Boring (NSB) (2018)
Soil Vapor Sample (SV) (2018)
Proposed New SV3-A Locatlon
Plume for Soil to Groundwater
Plume for Soil-Direct Contact
Notes:
1) All sample result values are in µg/Kg
2) Sample results below NR 720 RCLs are marked as -- or not represented in this figure.
3) J - Analyte detected below reporting limit
SITE NAME Westwood Dry Cleaners (#02-41-552537)
FIGURE NO. 3
FIGURE NAME Soil cVOC Isoconcentration Plume Map
ADDRESS 8731 West North Avenue, Wauwatosa, WI 53226
SCALE
0 25' 50'
HYDRODYNAMICS CONSULTANTS, INC.
5403 Patton Dr. Unit 215, Lisle, IL 60532
Tel: (630) 724-0098, HydrodynamicsConsultants.com



SITE NAME	Westwood Dry Cleaners (#02-41-552537)	FIGURE NO.	4
FIGURE NAME	Groundwater cVOC Distribution Map		
ADDRESS	8731 West North Avenue, Wauwatosa, WI 53226		

SCALE
0 25' 50'

HYDRODYNAMICS CONSULTANTS, INC.
5403 Patton Dr. Unit 215, Lisle, IL 60532
Tel: (630) 724-0098, HydrodynamicsConsultants.com

APPENDIX I
SAMPLE CHAIN-OF-CUSTODY AND LABORATORY ANALYTICAL RESULTS

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

December 29, 2018

Hydrodynamics Consultant, Inc.
5403 Patton Drive
Lisle, IL 60532

Telephone: (630) 724-0098
Fax: (800) 881-2051

Analytical Report for STAT Work Order: 18120638 Revision 0

RE: Westwood Cleaners, 8731 West North Avenue, Wauwatosa, WI 53226

Dear Mike Wan:

STAT Analysis received 8 samples for the referenced project on 12/19/2018 6:15:00 PM. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Part 186 / NELAP standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided. A listing of accredited methods/parameters can also be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Justice Kwateng
Project Manager

Client: Hydrodynamics Consultant, Inc.
Project: Westwood Cleaners, 8731 West North Avenue, Wauwa
Work Order: 18120638 Revision 0

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
18120638-001A	MW1-2		12/18/2018 12:20:00 PM	12/19/2018
18120638-002A	MW2-2		12/18/2018 12:55:00 PM	12/19/2018
18120638-003A	MW3-2		12/18/2018 1:20:00 PM	12/19/2018
18120638-004A	MW4-2		12/18/2018 1:45:00 PM	12/19/2018
18120638-005A	MW5-2		12/18/2018 2:10:00 PM	12/19/2018
18120638-006A	MW6-2		12/18/2018 2:35:00 PM	12/19/2018
18120638-007A	MW6-2 D		12/18/2018 2:40:00 PM	12/19/2018
18120638-008A	MW-TB		12/18/2018 9:30:00 PM	12/19/2018

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Accreditations: IEPA ELAP 100445; ORELAP IL300001; AIHA-LAP, LLC 101160; NVLAP LabCode 101202-0

Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-001

Client Sample ID: MW1-2
Collection Date: 12/18/2018 12:20:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL/MDL - Reporting Limit / Method Detection Limit for the analysis
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
H - Holding time exceeded

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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-002

Client Sample ID: MW2-2
Collection Date: 12/18/2018 12:55:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	0.0014	0.0050	0.0002	J	mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	0.0013	0.0050	0.0001	J	mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	0.012	0.0050	0.0003		mg/L	1	12/22/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL/MDL - Reporting Limit / Method Detection Limit for the analysis
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R - RPD outside accepted recovery limits
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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-003

Client Sample ID: MW3-2
Collection Date: 12/18/2018 1:20:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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RL/MDL - Reporting Limit / Method Detection Limit for the analysis
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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-004

Client Sample ID: MW4-2
Collection Date: 12/18/2018 1:45:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
* - Non-accredited parameter
RL/MDL - Reporting Limit / Method Detection Limit for the analysis
S - Spike Recovery outside accepted recovery limits
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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-005

Client Sample ID: MW5-2
Collection Date: 12/18/2018 2:10:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	0.029	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	0.0051	0.0050	0.0005		mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	0.066	0.0050	0.0003		mg/L	1	12/27/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	0.14	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	0.025	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-006

Client Sample ID: MW6-2
Collection Date: 12/18/2018 2:35:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	0.017	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	0.0030	0.0050	0.0005	J	mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	0.069	0.0050	0.0003		mg/L	1	12/27/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	0.036	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	0.0022	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
B - Analyte detected in the associated Method Blank
HT - Sample received past holding time
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R - RPD outside accepted recovery limits
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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-007

Client Sample ID: MW6-2 D
Collection Date: 12/18/2018 2:40:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	ND	0.010	0.0003		mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	0.013	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	0.0029	0.0050	0.0005	J	mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	0.078	0.0050	0.0003		mg/L	1	12/27/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	0.041	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	0.0024	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
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Date Reported: December 29, 2018
Date Printed: December 29, 2018

ANALYTICAL RESULTS

CLIENT: Hydrodynamics Consultant, Inc.
Work Order: 18120638 Revision 0
Project: Westwood Cleaners, 8731 West North Avenue, Wauw
Lab ID: 18120638-008

Client Sample ID: MW-TB
Collection Date: 12/18/2018 9:30:00 PM
Matrix: AQUEOUS

Analyses	Result	RL	MDL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS		**SW8260B (SW5030B)**		Prep Date:			Analyst: **MJK**
Acetone	ND	0.020	0.0031		mg/L	1	12/22/2018
Benzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromodichloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
Bromoform	ND	0.0050	0.0003		mg/L	1	12/22/2018
Bromomethane	ND	0.010	0.002		mg/L	1	12/22/2018
2-Butanone	ND	0.020	0.0016		mg/L	1	12/22/2018
Carbon disulfide	ND	0.010	0.0003		mg/L	1	12/22/2018
Carbon tetrachloride	ND	0.0050	0.001		mg/L	1	12/22/2018
Chlorobenzene	ND	0.0050	0.0002		mg/L	1	12/22/2018
Chloroethane	ND	0.010	0.0005		mg/L	1	12/22/2018
Chloroform	ND	0.0050	0.0001		mg/L	1	12/22/2018
Chloromethane	0.0021	0.010	0.0003	J	mg/L	1	12/22/2018
Dibromochloromethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,2-Dichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1-Dichloroethene	ND	0.0050	0.0004		mg/L	1	12/22/2018
cis-1,2-Dichloroethene	ND	0.0050	0.0002		mg/L	1	12/22/2018
trans-1,2-Dichloroethene	ND	0.0050	0.0005		mg/L	1	12/22/2018
1,2-Dichloropropane	ND	0.0050	0.0001		mg/L	1	12/22/2018
cis-1,3-Dichloropropene	ND	0.0010	0.0002		mg/L	1	12/22/2018
trans-1,3-Dichloropropene	ND	0.0010	0.0001		mg/L	1	12/22/2018
Ethylbenzene	ND	0.0050	0.0003		mg/L	1	12/22/2018
2-Hexanone	ND	0.020	0.0002		mg/L	1	12/22/2018
4-Methyl-2-pentanone	ND	0.020	0.0007		mg/L	1	12/22/2018
Methylene chloride	ND	0.0050	0.0002		mg/L	1	12/22/2018
Methyl tert-butyl ether	ND	0.0050	0.0003		mg/L	1	12/22/2018
Styrene	ND	0.0050	0.0003		mg/L	1	12/22/2018
1,1,2,2-Tetrachloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Tetrachloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Toluene	ND	0.0050	0.0004		mg/L	1	12/22/2018
1,1,1-Trichloroethane	ND	0.0050	0.0002		mg/L	1	12/22/2018
1,1,2-Trichloroethane	ND	0.0050	0.0001		mg/L	1	12/22/2018
Trichloroethene	ND	0.0050	0.0003		mg/L	1	12/22/2018
Vinyl chloride	ND	0.0020	0.0003		mg/L	1	12/22/2018
Xylenes, Total	ND	0.015	0.001		mg/L	1	12/22/2018

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below reporting limit
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HT - Sample received past holding time
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CHAIN OF CUSTODY RECORD

No: _____ **Page:** _____ **of** _____

Company: Hydrodynamics Consultant, Inc.

Project Number: Client Tracking No.:

Project Name: Westwood Cleaners

Location/Address: 8731 West North Avenue, Wauwatosa, WI 53226

Sampler(s): Mike Wan

Report To: Mike Wan Phone: (630) 724-0098

QC Level: 1 2 3 4 Fax: (800) 881-2051

Regulatory Program: NPEDS/MWRD RCRA SDWA SRP TACO Other:

P.O. No.:

Quote No.:

Turn Around:

Results Needed: am pm

Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab.	Preserv.	No. of Containers	VOCs	Remarks	Lab No.:
MW1-2	12/18/2018	12:20	Water		X	HCL	2	X		001
MW2-2		12:55								002
MW3-2		1:20								003
MW4-2		1:45								004
MW5-2		2:10								005
MW6-2		2:35								006
MW6-2D		2:40								007
MW-TB		9:30								008

Relingquished By: (Signature) Date/Time: 12/19/2018

Received By: (Signature) Date/Time: 12/19/18 1510

Relingquished By: (Signature) Date/Time: 12/19/18 1815

Received By: (Signature) Date/Time: 12/19/18 18:15

Relingquished By: (Signature) Date/Time:

Laboratory Use:

Sample Verification:

- Container OK	Yes ✓	No
- Sampes Leaking	Yes	No ✓
- Refrigerated (Temp: 3.9 °C)	Yes ✓	No
- Sample Labels Match Sample ID	Yes ✓	No

Work Order No.: 18120638

Preservation Code:

A = None B = HNO C = NaOH

D = H_2SO_4 E = HCl F = 5035/EnCore

STAT Analysis Corporation

Sample Receipt Checklist

Client Name HYDRODYNAMICS | Date and Time Received: 12/19/2018 6:15:00 PM

Work Order Number 18120638 | Received by: CHB

Checklist completed by: _____ 12/19/18 (Signature / Date) | Reviewed by: BM 12/19/18 (Initials / Date)

Matrix: | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels/containers?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature 3.9 °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐
Water - Samples pH checked?	Yes ☐	No ☐	Checked by: _____
Water - Samples properly preserved?	Yes ☐	No ☐	pH Adjusted? _____

Any No response must be detailed in the comments section below.

Comments: _____

Client / Person contacted: _____ Date contacted: _____ Contacted by: _____

Response: _____