July 17, 2018

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

Re: 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 Site Investigation Work Plan for your review and approval.

Attached please find:

- Completed Technical Assistance, Environmental Liability Clarification or Post-Clouse Modification Request
- Check for $700 fee
- Site Investigation Work Plan

If you need any further information, please contact me at 630-724-0098, or email to Mike_Wan@HydrodynamicsConsultants.com

Best Regards,

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

5403 Patton Dr., Suite 215, Lisle, Illinois 60532

Tel. 630-724-0098 Web Site: http://www.HydrodynamicsConsultants.com

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 9/15)

Notice: Use this form to request **a written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This from should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do <u>not</u> use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf"

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name
Sin	Dong		Westwood Cleaners

Mailing Address	City	State	ZIP Code
8371 West North Avenue	Wautatosa	WI	53226

Phone # (include area code)	Fax # (include area code)	Email
(414) 774-2201		jason5117@yahoo.com

The requester listed above: (select all that apply)

- ☒ Is currently the owner
- ☐ Is considering selling the Property
- ☐ Is renting or leasing the Property
- ☐ Is considering acquiring the Property
- ☐ Is a lender with a mortgagee interest in the Property
- ☐ Other. Explain the status of the Property with respect to the applicant:

Contact Information (to be contacted with questions about this request) ☐ Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name
Wan	Mike		Hydrodynamics Consultants, Inc.

Mailing Address	City	State	ZIP Code
5403 Patton Dr. Suite 215	Lisle	IL	60532

Phone # (include area code)	Fax # (include area code)	Email
(630) 724-0098	(630) 724-0098	mike_wan@hydrodynamicsconsultants.com

Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name
Wan	Mike		Hydrodynamics Consultants, Inc.

Mailing Address	City	State	ZIP Code
5403 Patton Dr. Suite 215	Lisle	IL	60532

Phone # (include area code)	Fax # (include area code)	Email
(630) 724-0098	(630) 724-0098	mike_wan@hydrodynamicsconsultants.com

Section 2. Property Information

Property Name	FID No. (if known)
Westwood Cleaners	

BRRTS No. (if known)	Parcel Identification Number
02-41-552537	342000600

Street Address	City	State	ZIP Code
8731 West North Avenue	Wauwatosa	WI	53226

County	Municipality where the Property is located	Property is composed of:	Property Size Acres
Milwaukee	◉ City ○ Town ○ Village of	◉ Single tax parcel ○ Multiple tax parcels	0

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

◉ No ○ Yes

Date requested by: _____

Reason:

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

◉ No. **Include the fee that is required for your request in Section 3, 4 or 5.**

○ Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:
Section 3. Technical Assistance or Post-Closure Modifications;
Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: **[Numbers in brackets are for WI DNR Use]**

☐ No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of $350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.

☒ Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of $700.**

☐ Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of $1050.**

☐ Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of $1050.**

☐ Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of $1050.**

☐ Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of $1050.**

☐ Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of $350**

☐ Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of $425.**

☐ Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of $425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

☐ Schedule a Technical Assistance Meeting - **Include a fee of $700.**

☐ Hazardous Waste Determination - **Include a fee of $700.**

☐ Other Technical Assistance - **Include a fee of $700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

☐ Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of $1050, and:**

☐ Include a fee of $300 for sites with residual soil contamination; and

☐ Include a fee of $350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

☐ Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description; and,
(3) a draft 75.105 agreement based on the DNR's model (dnr.wi.gov/topic/brownfields/documents/mod75-105agrmt.pdf).

☐ Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description; and,
(3) a draft 75.105 agreement based on the DNR's model (dnr.wi.gov/topic/brownfields/documents/mod75-106agrmt.pdf).

☐ Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

- ❖ **Include a fee of $1400, and the information listed below:**

(1) a draft schedule for remediation; and,
(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

☐ Phase I Environmental Site Assessment Report - Date:_____

☐ Phase II Environmental Site Assessment Report - Date:_____

☐ Legal Description of Property (required for all liability requests and specialized agreements)

☐ Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

☐ Groundwater ☐ Soil ☐ Sediment ☐ Other medium - Describe:_____

Date of Collection:_____

☐ A copy of the closure letter and submittal materials

☐ Draft tax cancellation agreement

☐ Draft agreement for assignment of tax foreclosure judgment

☐ Other report(s) or information - Describe:_____

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

◯ Yes - Date (if known):_____
◯ No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at: dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

☒ I am the person submitting this request (requester)

☐ I prepared this request for: _____
Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

Signature	Date Signed
Title	Telephone Number (include area code)

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.

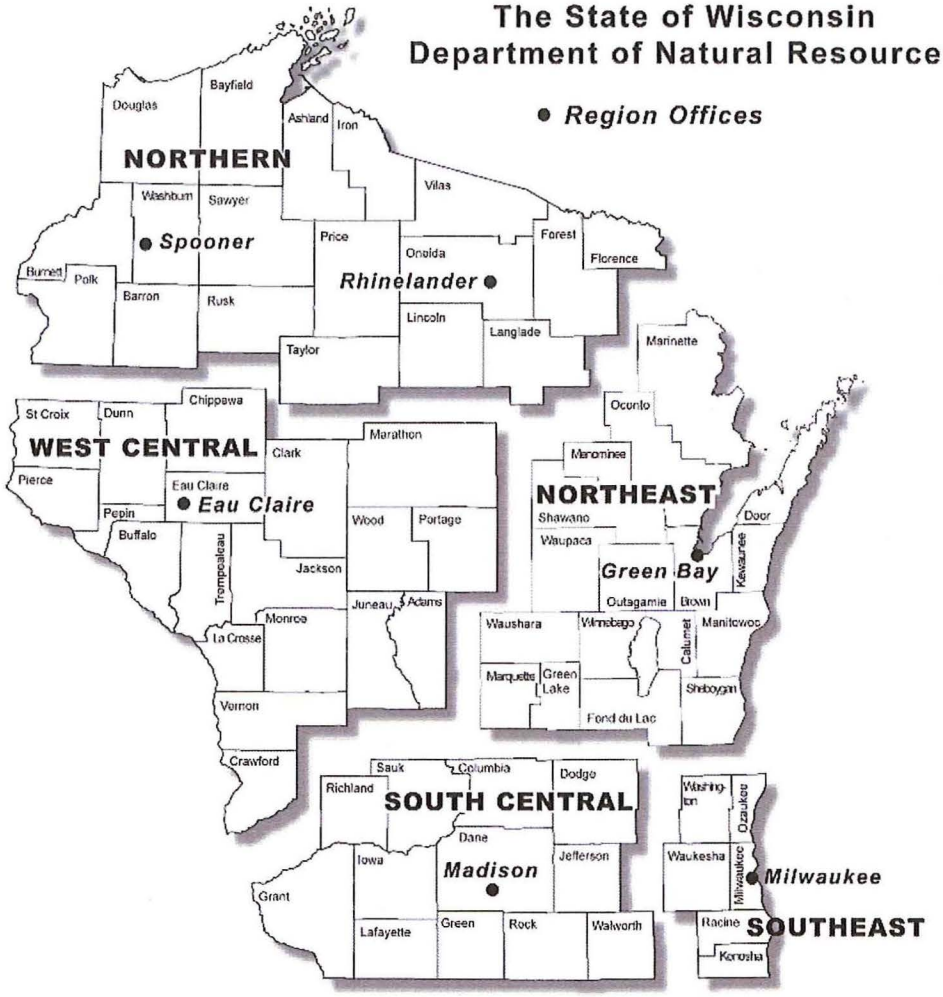
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

DNR WEST CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer	Comments		
Fee Enclosed? ◯ Yes ◯ No	Fee Amount $	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

SITE INVESTIGATION WORKPLAN

Prepared For
Westwood Cleaners
(WDNR BRRTS#02-41-552537)

Attn. Mr. Dong Sin
8731 West North Avenue
Wauwatosa, Wisconsin 53226

September 7, 2017
Revised June 21, 2018

5403 Patton Dr., Suite 215, Lisle, Illinois 60532
Tel. 630-724-0098 Web Site: http://www.HydrodynamicsConsultants.com

Certifications

I, Mike (Minghua) Wan, hereby certify that I am a hydrogeologist as the term is defined in NR 712.03 (1), 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, Wic. Adm. Code.

Signature: Mike (Minghua) Wan, PE

Title: Professional Engineer

Date: June 21, 2018

5403 Patton Dr., Suite 215, Lisle, Illinois 60532

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5403 Patton Dr., Suite 215, Lisle, Illinois 60532

Tel. 630-724-0098 Web Site: http://www.HydrodynamicsConsultants.com

1.0 INTRODUCTION

1.1 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

1.2 Site Location Map

Please see attached Figure 1, Site Base Map

1.3 Site Physiographical and Geological Information

1.3.1 Topography/Geology

The general topography of land is flat with an elevation of 850 feet above sea level being the average. The local ground surface slopes gently to the southwest.

The bedrock is primarily medium to coarse grained, thin to thick bedded and very light to light gray.

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

Further topographical and geological information may be researched during further site investigation activities.

1.3.2 Hydrogeology

No groundwater study has been done at this site yet. But groundwater was encountered about 6' below the ground surface during previous site investigation soil sampling. Groundwater is anticipated to flow to the south/southwest toward the Menomonee River according to the local topography.

Further hydrogeological information may be researched during further site investigation activities.

1.4 Prior Site Investigation Outcomes and Future Objectives

Hydrodynamics Consultants, Inc. (HDC) completed an initial site investigation on August 19, 2008. HDC performed limited soil boring and testing at the subject property. Four (4) soil borings were advanced to a depth of 16' deep each, 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 (PCE or perc) and its degraded products are present at the site.

Perchloroethene (PCE), also known as tetrachloroethylene, was used at the Cleaner, and waste PCE and spent filters, both hazardous wastes, were generated during the drycleaning operation conducted at this drycleaning facility. Therefore, the contaminants of concern investigated in this project consist of PCE and its degraded byproducts, such as trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride (VC), and etc.

A Potential Claim Notification was completed and sent to the Department of Nature Resources (DNR) on August 28, 2008. Jennifer Feyerherm, Grant Manager of the WDNR sent the owner, Mr. Song Sin a letter on July 20, 2016, stating the site is qualified for reimbursement from the Wisconsin Drycleaners Environmental Response Fund (DERF).

HDC believes, based on the site inspection, that the contamination is related to a spill or incidental release of perchloroethene near the drycleaning machines and indoor waste drum. Other similar incidents may also have taken place near the rear door, where the drycleaning solvent is delivered, and the outdoor waste storage area. At this time the drycleaner owner has been implementing

secondary storage containers in order to minimize the impact of any incidental release or spill. It appears that this dry-cleaner is in compliance with regulatory requirements.

Based on the laboratory analysis, up to 320 mg/kg of PCE was found in the borings (See Figure 2 Site Map with Initial Site Investigation Results). Therefore with the permission of the property owner, Mr. Dong Sin, HDC submits this Site Investigation Workplan in order to gain approval to conduct an Additional Site Investigation which will:

- Gather information needed to define the nature, degree and extent of chlorinated volatile organic compound contamination from the drycleaning operation at site;
- Define the source or sources of the contamination;
- Establish cleanup goals for CVOCs in the soil, groundwater, and soil gas to protect the public health, safety, welfare, and environment.

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2.0 SITE INVESTIGATION SCOPING & CLOSURE OBJECTIVES

2.1 Site Investigation Scoping

Pursuant to Chapter NR 716.07, Site Investigations Scoping, the following will summarize the known conditions at this site.

2.1.1 History of the Site

According to our inquiry, the subject dry-cleaning plant has been situated here and in operation since about 1985. Prior to 1985, no knowledge of presence of hazardous materials on the property was found. The surrounding properties or store spaces have been used for commercial purposes without known involvement of any hazardous materials.

2.1.2 Knowledge of the Type of Contamination and Amount of the Contamination.

Drycleaning solvent, tetrachloroethene or perchloroethene (PCE) has been used 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 (as volatile organic compounds, VOCs) are the only contaminants of concern for this site. The subsurface contamination of PCE may have been from historical spills or incidental releases during the drycleaning operation. The amount of PCE in the subsurface environmental needs to be further determined, but the total amount of the released PCE is estimated to be less than 10 gallons based on the previous soil analytical results.

2.1.3 History of Previous Hazardous Substance Discharge or Environmental Pollution

The site has been used by Westwood Cleaners as a drycleaning plant since1985. The contamination of PCE may have come to be through historical spills or releases during the drycleaning operation. PCE pollution was discovered in the soil. Further delineation of PCE contamination in the soil, groundwater, and soil vapor is proposed.

2.1.4 Environmental Media Affected or Potentially Affected by the Contamination

PCE and its degraded compounds pollution was discovered in the soil. Further delineation of PCE contamination in the soil, groundwater, and soil vapor is warranted.

2.1.5 Location of the Site of Facility, and its Proximate to Other Contamination

The subject property is located on the southwest corner of the intersection of West North Avenue and Ludington Avenue in the City of Wauwatosa, WI. (See Site Base Map, Figure 1). 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 groundwater flow direction was reported to flow to the southwest. The gasoline station site

was closed with conditions. 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.

The proposed site investigation will investigate potential subsurface environmental impact for volatile organic compounds (VOCs). So, if any petroleum components, such as benzene, toluene, ethyl-benzene, and xylenes are present, they can be identified in the samples.

2.1.6 Need for Permission from Property Owners to Allow Access the Site and Nearby Properties.

Since the VOC contamination may have migrated into the adjoining property to the east at 8725 West North Avenue, permission from the property owner to access that property for site investigation is needed. Furthermore, if the VOCs contamination has migrated to the public alley to the south or the street right of ways to the west or north, permission to site investigation from the City of Wauwatosa is warranted.

2.1.7 Potential or Known Impacts to Receptors

Exposure to tetrachloroethene (PCE or perc), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride (VC), and etc., may have negative impacts on human health. As with most chlorinated solvents, acute exposure primarily affects the central nervous system and causes skin, throat, and eye irritation. In addition, PCE adversely affect the liver and kidneys, and has been classified by the International Agency for Research on Cancer (IARC) as “probably carcinogenic to humans”.

No known receptor has been identified. The proposed Site Investigation will assist with the identification of potential receptors. However, due to the potential impacts of tetrachloroethene (PCE or perc), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and vinyl chloride (VC) it is important to prevent contamination of potable water and prevent vapor intrusion to buildings.

Potential receptor contact with the contamination can be facilitated through private or public water supplies, buildings and other cultural features, utilities and subsurface improvements. Utility lines, especially water lines, sanitary and storm sewer lines, natural gas lines, electric lines, any other buried lines, will be marked prior to the site investigation. Floor sumps and other subsurface improvements will also be marked in the maps so proper investigation can be performed.

Floor cracks or openings inside buildings will also be investigated to see if soil vapor intrusion is a concern. Vapor intrusion considers the possibility that the VOCs in soil and groundwater can vaporize to form a gas and move through soils into indoor air where it may be inhaled. The vapor may enter a dwelling through cracks, separations or other open spaces within a slab or foundation.

HDC preformed a private water well search by way of Wisconsin’s DNR Drinking Water System; Well Construction Reports database. There were no records found for private wells within 1,200

feet of the subject property. Next, HDC searched the Historic Well Construction Reports (1930-1989) database and found a record of a water well approximately 1080 feet northwest of the subject property. A water well survey map is located as Figure 4.

The Menomonee River is approximately 1,800' feet to the southwest of the subject property.

2.1.8 Potential for Impacts to Wetland, Water Resources, Sites with Significant Importance

No evidence indicates any impact of the wetland (specially designated in NR 103.04), water resources (as defined in NR102.10-11), or site with significant importance (such as historical or archaeological sites) from this site.

2.1.9 Potential Interim and Remedial Actions Applicable to the Site

The contamination may have come to be from historical spills or incidental releases. The owner/operator has maintained good housekeeping and has been very careful to prevent any potential releases from this operation. The current drycleaning equipment has been upgraded to a close-loop drycleaning machine with a secondary containment pan installed below the machine. The secondary containment pan can collect and hold 110% of the volume of the largest solvent tank in case there is a release from the solvent tanks installed under the drycleaning machine. The used solvent and filters have been placed inside a steel drum for recycling or proper disposal. The waste storage drum for the spent PCE and filters has been placed inside the store behind the drycleaning machine.

Based on the existing results, no active remedial action is determined. However, if further site investigation indicates any potential risks to the public health, safety, welfare, and/or the environment, remedial actions may be proposed.

2.1.10 Immediate or Interim Action Taken

No immediate or interim action has been taken. However, if further investigation results warrant immediate or interim action, is will be proposed.

2.1.11 Other Items, Including Climatologically Conditions, and background Water or Soil Information That May Affect the Site Investigation

No known climatologically conditions, and background water or soil Information is found that may affect the site investigation.

2.1.12 The Need to Gather Data to Determine the Hydraulic Conductivity of Materials Where Contamination Is Found

To determine the groundwater hydraulic conductivities in the strata where the VOCs are found, slug tests will be conducted in the proposed piezometers which are 2"-diameter monitoring well installed

with augers. The groundwater flow direction and flow rate, as well as the water table gradient will be determined by measurements of the surface elevation and the water depth in each well.

2.2 Site Closure Objectives

HDC will conduct the site investigation pursuant to the Ch. NR716, Site Investigation for the proposed work. Based on the data gathered from the proposed sampling and investigation, HDC will prepare a Site Investigation Report and establish soil and vapor cleanup goals, and follow NR140 for Groundwater Standards. Appropriate remedial options analysis will be prepared pursuant to Ch. NR 722 and NR 726 for final closure goals and documentation.

The proposed scope of work for this site investigation may not be conclusive, and additional investigations may be proposed based on new results. However, the final case closure objectives for this site may include the following:

1) The degree and extent of contamination in the soil, groundwater, and soil gas will be adequately defined;
2) The source of the contamination will be removed, and/or remedial/interim actions will be completed, if warranted;
3) Soil vapor intrusion will be fully mitigated with sub-slab depressurization systems, if needed, and
4) Groundwater contaminant concentrations will be conclusively determined to be generally stable or decreasing without posing any threat to the public health, safety, welfare, and the environment.

Upon fully addressing the potential risks posed by the released CVOCs in the soil, groundwater, and soil gas, the residual contamination can be managed by continuing obligations, including:

- Maintaining site structures and pavements as engineered barriers to prevent contaminant ingestion and inhalation risks, and leaching from underlying soil to the groundwater;
- Implementing groundwater use restriction to limit construction of water supply wells within the potentially impact properties;
- Operation of the existing vapor mitigation system (VMS) to address the potential for vapor intrusion to the properties identified by the Site Investigation, if needed;
- Restricting the future use of the dry cleaner facility to commercial purposes.

3.0 SITE INVESTIGATION SUMMARY

To satisfy the requirements of the WDNR, HDC proposes to conduct the following:

- Contact the diggers hotline to request the public utility companies to mark all their utility lines at and around the property, including the property to the east and the surrounding public right of ways;

- Mobilize crews for drilling, sampling, and testing to the project site to conduct the field work.

- Complete **12** soil borings to a depth of 16 - 20 feet (each) below the ground surface. Each boring will be logged in accordance with the Unified Soil Classification System ("USCS") to document the subsurface strata, variation of soil color, compositions and visual evidence of drycleaning solvent contamination.

- Continuously retrieving soil samples from each of the above soil borings, and collected soil samples at 2'-intervals for screening with a photo-ionization detector (PID) for VOC concentrations.

- Select **36** representative soil samples, three from each soil boring, for laboratory analysis of VOCs. Each soil sample will be collected in accordance with SW-846 Method 5035 using a purge-and-trap soil sampler. A bulk soil sample will also be packed into a 4-ounce glass jar for the determination of the sample's dry weight. All soil samples submitted will be analyzed for volatile organic compounds (VOCs) utilizing SW-846 Method 8260B.

- Additional **2** soil samples will be collected from outside the potential contamination plume at depths below the water table. These soil samples will be analyzed for fractional organic carbon contents (foc) in accordance with ASTM D 2974-87, entitled "Standard Test Methods for Moisture, Ash and Organic Matter of Peat and Other Organic Soils". The foc content will help to determine the attenuation capacity of local soil to the VOCs at this site.

- Convert 6 soil borings to **6** groundwater monitoring wells to a depth of 15 to 20 feet or to a depth of at least five feet below the water table. These wells will be 1"-diameter PVC wells installed inside 2"-diameter probed borings. The monitoring wells will be flush mounted, and the well annular space is packed with silica sand around the screen and sealed with bentonite above. The screen depth will be about two feet above the water table. Upon completion, all wells will be developed.

- Install **2** piezometers outside the south wall of the drycleaning store. The shallower one will be about 12' deep with a 2.5' screen in the bottom and 9.5' riser pipe above, and the deeper one will be about 20' deep with a 2.5' screen in the bottom and 17.5' riser pipe above. These two wells will be used to evaluate the vertical distribution of groundwater

contamination and gradient. They are 2"-diameter wells installed with augers, and they will be used for slug tests, too.

- Collect and submit **10** representative groundwater samples for laboratory analysis (6 samples from the 6 monitoring wells, 2 from the two piezometers, 1 for duplicate and 1 for trip bank). The groundwater samples will be collected using a PVC bailer designated to each well and immediately preserved in 4-ml glass vials containing HCl. The groundwater samples submitted will be analyzed for VOCs utilizing SW-846 Method 8260B. Proper well purging will be completed before the sampling.

- Complete **1** round of water table depth measurements from the monitoring wells and survey the ground surface to determine the groundwater table slope or flow directions.

- Perform **2** Slug tests in the piezometers (2"-diameter wells) to determine the hydraulic conductivities for water-saturated subsurface soil formations.

- Conduct a water-supply well survey by contacting the local municipalities and related parties to determine if there is any private or community well in the vicinity of the subject drycleaner facility and to determine if the released SVOCs could impact any water supply wells.

- Collect **5** representative soil vapor samples (4 from the proposed soil vapor sampling ports and one duplicate from SV3) inside the subject building and the adjoining building to the east to determine if soil vapor intrusion is a risk concern at this site. Summa canisters will be used for the soil vapor collection. RR-800, "Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin" procedures will be followed.

- Prepare a Site Investigation Report. Remedial goals will be established and options for remedial actions will be evaluated in accordance with Wis. Admin. Code § NR 722.

4.0 SITE INVESTIGATION PLAN AND METHODOLOGIES

4.1 Soil Sampling

4.1.1 Selection of Soil Boring Locations

Prior to the emplacement of soil borings and monitoring wells, HDC visually and physically inspects the subject facility to identify the areas of concern that are present. This site inspection is also aided with the review of public records and as interview with the current storeowner or occupant. The previous reports, if any, will be a guide to the additional soil and groundwater sampling.

Based on the above studies, the following areas of concern have been identified at the subject drycleaner facility and warrant further investigation:

- Area around drycleaning machines, since the machines are presumed to be the main potential source for PCE release at the subject facility.
- Previous perc-based drycleaning machine locations are also major potential contamination sources;
- Locations near floor drains, sumps, or pipelines, if any;
- The back door area where drycleaning solvent is/was delivered and waste solvent/filter are/were removed; and
- Areas identified by previous site investigation sampling.

Our proposed soil sampling locations (see Figure 3, Proposed Sample Location Map) have been strategically selected based on the above conditions. Below is our rational:

NSB1 – to delineate the potential contamination plume to the west near the property line.

NSB2 – to delineate the potential contamination plume to the south near the property line.

NSB3 – to delineate the potential contamination plume to the east in the neighboring property.

NSB4 – to delineate the potential contamination plume to the north near the property line.

NSB5 – to confirm the contamination degree in close proximity to the drycleaning machine where drycleaning solvent, tetrachloroethene (PCE or perc) and its degraded products were previously discovered (to characterize the source areas).

NSB6 – to confirm the contamination degree in close proximity to the drycleaning machine where drycleaning solvent, tetrachloroethene (PCE or perc) and its degraded products were previously discovered (to characterize the source areas).

NSB7 – to confirm the concentrations of contamination to the west of the drycleaning machine where drycleaning solvent, tetrachloroethene (PCE or perc) and its degraded products was previously discovered

NSB8 – to delineate the potential contamination plume to the southwest.

NSB9 – to confirm the concentrations of contamination in close proximity to the outdoor disposal area and next to the waste storage drum area.

NSB10 – to confirm the concentrations of contamination west of the drycleaning machine where drycleaning solvent, tetrachloroethene (PCE or perc) and its degraded products were previously discovered.

NSB11 – to confirm the concentrations of contamination in close proximity to the drycleaning machine where drycleaning solvent, tetrachloroethene (PCE or perc) and its degraded products were previously discovered.

NSB12 – to delineate the potential contamination plume to the northeast.

Soil boring locations (see Figure 3, Proposed Sample Location Map) are designed to provide adequate coverage for the potentially contaminated areas to ensure that the source and extent of VOC contamination are properly investigated, and the contamination plume is reasonably defined, and the natural and/or potential man-made pathways, which mainly consist of the current and/or former underground utilities conduits and sanitary/storm sewer pipes, are adequately investigated in the study.

Soil sample collection locations are to be reviewed with the property owner or representative prior to subsurface activities to determine the location of private utilities and other obstructions. A one call service for utilities location will be also contacted in order to mark all the utility lines at and along adjoining streets at the site. Utility line placement information will be added to appropriate maps. Soil sample locations may need to be moved during the soil boring process due to various conditions, including but not limited to utility lines and subsurface refusal encountered while drilling.

Procedures used to collect the samples are provided in the subsections below.

4.1.2 Soil Sampling Point Determination from Soil Cores

During soil sampling activities in the field, each soil boring is continuously sampled, logged and described, with representative soil samples being collected at a depth interval of every two feet in any given soil boring. All of the soil samples are to be screened and measured with a photo-ionization detector (PID) (MiniRAE2000 equipped with a 10.6 eV lamp and calibrated with the 100 ppm benzene equivalent of isobutylene) in the field for the presence and concentrations of volatile organic compounds (VOCs) in the soil samples.

However, due to the cost concern, not every soil sample as collected is submitted for laboratory analysis. Rather, the soil sampling points, from which the representative soil samples are selected for laboratory analysis, are determined using the following criteria:

- The first soil sample is selected for analysis within the upper 3 feet to evaluate the soil ingestion pathway and the surface soil conditions.

- The second soil sample is selected for analysis at the most contaminated segment based on PID readings, odor, visual observation, etc. in order to define the highest level of contamination in the soil boring.

- The third soil sample is collected at the depth representing the lower boundary of the contamination plume in a vertical plane. This lower boundary of the contamination plume is identified in the field at the depth where no PID reading higher than zero ppm is recorded and no visual evidence of contamination, such as odor and/or discoloration, is observed. This soil sample is collected to help delineate the vertical soil contamination.

For the soil borings placed in the source area, additional soil samples may be collected to delineate the vertical distribution of the contaminants of concern (COCs).

4.1.3 Soil Sample Collection

During the soil sampling process, each soil boring is advanced with a GeoProbe system and is continuously sampled with a 4-foot stainless-steel sampling tube lined with a four-foot long plastic liner.

Upon retrieval, the plastic liner along with the soil core is immediately taken out of the sampling tube and is cut open for soil sampling. To minimize the loss of the contaminants through volatilization, the following procedure is followed in soil sampling activities in chronological order:

After the plastic liner is cut open, the entire soil core is screened with the PID to determine the highest VOC concentration segment of the soil core where it is then immediately sampled using purge-and-trap samplers (plastic syringes) for a total of four discrete soil samples on the same segment. Each discrete soil sample is collected into two 40-ml glass vials; one containing a sodium bisulfate preservative, and one 40-ml glass vial containing a methanol preservative. Said glass vials are provided by the laboratory and are deemed clean. Upon collection, soil samples are immediately preserved in an ice chilled cooler. One 4-ounce glass jar is also packed with the same sample for testing of the moisture content and other parameters.

One soil sample is also taken at an interval of every 2-feet of the entire length of the four-foot soil core for head-space screening with PID. These PID screening samples are placed in air-tight plastic bags. Prior to taking the PID readings, we allowed enough time for each soil sample to stabilize. PID measurements are performed using the standard headspace method in which the soil

organic vapors that built up in the top 3/4 empty headspace are directly measured with a MiniRAE2000 PID meter. The PID meter is calibrated daily to read in 100 ppm benzene equivalent of Isobutylene in a detection range from 0.1 ppm to 9,999 ppm.

The entire four-foot long soil core is then carefully inspected for visual signs of contamination, and a description of the subsurface strata, variation of soil color, compositions, etc. is noted.

Based on the combined results of the field PID measurements and visual inspection/observation of the soil core brought up by the GeoProbe, HDC selects representative soil samples for laboratory analyses from each soil boring.

All VOC samples are collected, stored, and handled in accordance with the EPA's SW-846 Method 5035. Each set of soil samples is contained in four containers, with three 40-ml glass vials respectively containing sodium bisulfate & methanol, and one 4-oz glass jar. The soil sample packed in the 4-ounce jar is used to measure the moisture content of the soil sample among other purposes.

Proper decontamination procedures are followed during the soil sampling activities. The sampling tubes are washed and rinsed prior to and between each sampling activity. A new plastic liner is used for each soil boring advancement. A new pair of gloves is used for the collection of each soil sample.

The Chain of Custody documentation is strictly adhered to during the field sampling activities and during the holding and delivery of the soil samples from the field to a NELAP NIHA-LAP accredited laboratory (Stat Analytical Corporation in Chicago, Illinois) for analysis.

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

All samples are generally picked up by an analytical laboratory the same day of sampling or 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 up to 4ºC.

A temperature blank is included within each cooler.

Upon completion of the soil boring activities, each soil boring is filled with bentonite, and then patched with concrete or asphalt to match the original surface finish.

4.2 Sub-Slab Soil Gas/Vapor Sampling

Based on the existing soil VOC results, HDC proposes collection of 4 soil vapor samples (SV1 to SV4 in Figure 3) in the subject property and the adjoining restaurant property to the east. HDC has provided a map which shows a 100 foot radius from the soil contamination plume (Please see

Figure 1, Site Base Map). Since the soil contamination was detected around the drycleaning machine, further soil and groundwater sampling will be conducted in NSB1/MW1, NSB2/MW2, NSB3/MW3, and NSB4/MW4 which are proposed in the potentially outline of the contamination plume. If the new soil and groundwater samples in these locations are not detected, no further soil vapor sample may be needed in buildings other than the subject building and the adjoining building to the east.

Pursuant to Publication RR-800 (January 2018), Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin, and RR986 (Sub-Slab Sampling Procedures), to assess the indoor sub-slab vapor quality, the following air sampling procedure is applied:

- Drill sub-slab sampling holes in the concrete floor inside the building.
- Properly insert the copper sampling probes with rubber sleeves into sub-slab sampling holes. The rubber sleeves tightly seal the surrounding gaps between the copper probes and the walls of the concrete holes.
- Construct a small water dam with VOC-free play mud around the sampling port and pouring of water inside the dam to ensure no leakage around the probes. If leakage is present corrections are made.
- Sampling Device (Summa canister and flow control regulator provided by a certified lab) Preparation: (a) check to make sure the canister valve is tightly closed, (b) remove cap from the canister air inlet using a 9/16 wrench and use the cap to seal the inlet of the flow control regulator, (c) attach the flow control regulator and tighten it, (d) quickly open the canister valve ½ turn and watch to observe that the pressure gauge stays at its preselected pressure (around 30" Hg) without dropping. If a pressure drop is observed, re-tighten the connections and cap.
- A 3-way shutoff valve is connected to one end of a Teflon tube and the other end of the tube is connected to the copper sampling probe inserted in the sampling port in the concrete floor. The valve can be tightly connected to the 0.25" OD and 0.125" ID Teflon tubing with 100% seal.
- The inlet port for the Summa canister is tightly connected to one outlet of the 3-way valve while the purging pump (with PID reading) is tightly connected on the other outlet. The 3-way valve can turn on one outlet while turning off the other outlet simultaneously.
- The 3-way valve is first turned on to the purging pump outlet to purge 3 times its volume of the sampling train (including volume of tubing and the cavity, up to 10 liters or 10 minutes) prior to sampling.
- Turn the 3-way valve off the purging pump and turn on the inlet to the Summa canister to allow air to be sucked into the vacuumed Summar canister from the sub-slab.
- Isopropyl Alcohol tracer fluid is now spread over a towel that covers the sampling train during the sampling to ensure no leakage into the sample train.
- Turn on the Summa canister valve to observe the vacuum pressure drop on the regulator gauge from about 30" Hg.
- A sample of soil vapor is drawn through a sampling train comprised of components that regulate the rate and duration of sampling into the pre-evacuated Summa canister provide by the laboratory.

- Turn off the canister valve when the pressure gauge reaches about 5" Hg and replace and tighten the canister cap (it may take about 8 minutes for each sample withdrawing process to fill a one liter Summa canister).
- Record the final canister pressure and flow controller number on the canister sample tag, including sample ID and other information.
- The sample is then sent to the laboratory for analysis of VOCs using Method TO-15, including isopropyl alcohol content as its QA/QC parameter.

The borehole is later sealed with cement to match the existing conditions.

4.3 Groundwater Sampling

4.3.1 Monitoring Well Preparation

Generally, monitoring wells are constructed with a 1"-diameter PVC screen and case; with a 10-foot to 15-foot PVC screen and 5-foot PVC riser. The annular space of the well is first filled with silica sand to a depth of about two feet above the well screen, then topped with two feet of bentonite, and then flush-mounted and grouted onto the surface. Upon completion, the groundwater monitoring well is developed by purging the standing water in the well until it is free or largely free of fines.

4.3.2 Groundwater Sample Collection

During groundwater sampling, the following procedures are adhered to:

- Prior to groundwater sampling, the wells are purged with a disposal bailer until they are free of visible fines.
- A groundwater sample is then retrieved with a disposable PVC bailer equipped with a Teflon ball check valve at the bottom.
- Each groundwater sample retrieved is divided and dispensed into two 40-ml glass vials containing HCL.
- The sample containers are closed with Teflon-lined lids.
- Upon completion, groundwater samples are immediately stored in an ice-chilled cooler.

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.

Proper decontamination procedures are followed during the groundwater sampling activities. A new PVC bailer is used in each groundwater sampling activity. A new pair of gloves is used for collecting each groundwater sample.

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 the same day of sampling or 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 an laboratory accredited by WDNR.

A trip blank, a duplicate sample, and a temperature blank are included with each groundwater sampling event.

4.4 Sample Handling

The collected samples are labeled, packaged, and shipped in accordance with procedures outlined above.

4.5 Quality Assurance/Quality Control

Quality control (QC) samples may be collected to evaluate the field sampling and decontamination methods, and the overall reproducibility of the laboratory analytical results. Specifically, QC samples may be collected at the following frequencies:

- Trip Blank - 1 per shipment or cooler for water samples
- Field duplicate samples - 1 per 10 investigative samples for groundwater samples
- Matrix spike/matrix spike duplicate samples - 1 per 20 non-air investigative samples

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 investigative samples.

The HDC project manager, Mr. Mike Wan, PE, is responsible for ensuring that sample quality and integrity are maintained and that sample labels and documentation procedures are correct and accurate.

4.6 Decontamination

Dedicated sampling equipment is primarily used during the collection of soil and groundwater samples. Used sampling equipment and personal protective equipment (PPE) is double-bagged and disposed of as dry, industrial waste.

Non-disposable equipment (such as the stainless steel dual tube coring devices, waster table measurement and slug test equipment) is decontaminated between sampling locations. They will be cleaned with environment-friendly detergent and rinsed with tap water. Decontamination water use will be kept to a minimum, and typically 5-10 gallons of rinsate water is generated. The decontamination water is disposed of on-site by evaporation over a hard surface.

4.7 Piezometers Installation and Evaluation

To evaluate the vertical distribution of contaminants and the vertical gradient of groundwater, HDC will install piezometers in selected locations. Since the site is located in a glacial till formation with groundwater table estimated to be at 6' to 8' below the ground surface, the piezometers will be installed to the depth of 12' and 20'below the ground surface, based on the evaluation of available geological information. The shallower piezometer will be installed to the depth of 12', with a 2.5' screen in the bottom and 9.5' riser pipe above. The deeper piezometer will be placed at a depth of 20', with 2.5' screen in the bottom and 17.5' riser pipe above. Both of the piezometers will be drilled with 5"-diameter augers. Pre-manufactured 2"-diameter PVC screen and riser pipes will be used for the piezometer construction. The screens will be include 0.01" slots and screw connections. The bottom of the screen will be capped. Coarse silica sand will be used to pack around the screens and bentonite/cement will be used to seal the space above. Flush-mounted steel manholes will be used to cover these piezometers. These wells will be used for the slug tests to determine the hydraulic conductivity of the local soil at different depths.

5403 Patton Dr., Suite 215, Lisle, Illinois 60532

Tel. 630-724-0098 Web Site: http://www.HydrodynamicsConsultants.com

5.0 COST ESTIMATE

Due to the addition of two piezometers and one additional soil vapor sample, additional unit charges have been applied to the costs. Please see the revised DERF Site Investigation Bid Sheets in Appendix I.

6.0 PROPOSED SCHEDULE

HDC anticipates that the fieldwork may take one to two weeks. The tentative schedule is as follows.

Activities	Estimated Completion Date
Workplan Completion and Submittal to WDNR	June 21, 2018 (revised)
WDNR Review and Approval	July 2018
Field Work	10 working days Upon Approval of DNR and Owner
Evaluate Data and Prepare Reports	10 Working Days after Lab Results

7.0 TERMS & CONDITIONS

The terms and conditions between the Client and Hydrodynamics Consultant, Inc. are agreed upon as follows:

- Client will provide HDC and/or its subcontractors with adequate physical access to the subject property;

- The Client will pay $20,000 down payment when this Site Investigation Workplan is approved by the DNR, and accepted by the owner, and then will make monthly payments of $2,000/month until balance is paid off.

- HDC will provide equipment and labor to complete the scope of work proposed herein in a manner consistent with all regulatory requirements (especially NR 716) and/or industry standards.

- The field work may take about one week to complete. HDC will try to complete the report within one month after the fieldwork is completed.

- HDC will assist Client reimbursement of the costs from the Wisconsin Drycleaners Environmental Response Fund. But HDC will not guarantee full reimbursement, nor will Client's payment for HDC's work be conditioned with any third party payment to the Client.

8.0 WORKPLAN PREPARER'S SIGNATURE

The above Site Investigation Workplan is prepared and submitted by

Mike (Minghua) Wan, PE
Vice President
Consultant: Hydrodynamics Consultants, Inc

9.0 OWNER'S APPROVAL AND ACCEPTANCE OF THE ABOVE WORKPLAN

The above Site Investigation Workplan is approved and accepted by

Dong Sin _____ (Signature), Date _____

Title _____

Westwood Cleaners
8371 West North Avenue
Wauwatosa, WI 53226

Attachments:

FIGURES

Figure 1 Site Base Map
Figure 2 Site Map with Initial Site Investigation Results
Figure 3 Proposed Sampling Location Map
Figure 4 Well Survey Map

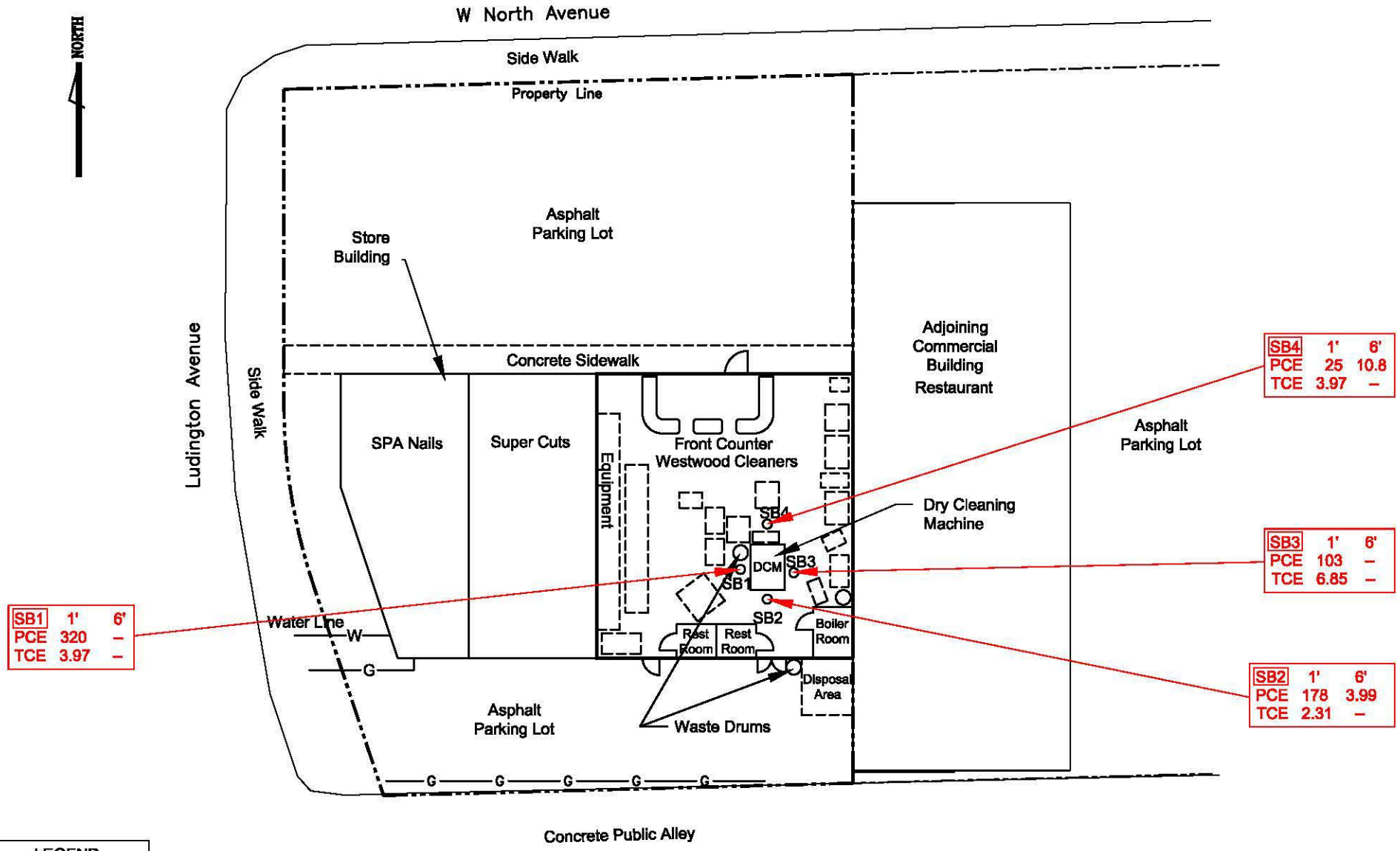
APPENDIX I

DERF Site Investigation Bid Sheets

FIGURES

Figure 1 Site Base Map

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



LEGEND
○ Soil Boring (SB)
⊕ Monitoring Well (MW)

Note: All units are in mg/kg.

SITE NAME	Westwood Dry Cleaners (#02-41-552537)	FIGURE NO.	2
FIGURE NAME	Site Map with Initial Site Investigation Results		
ADDRESS	8751 West North Avenue, Wauwatosa, WI 53226		

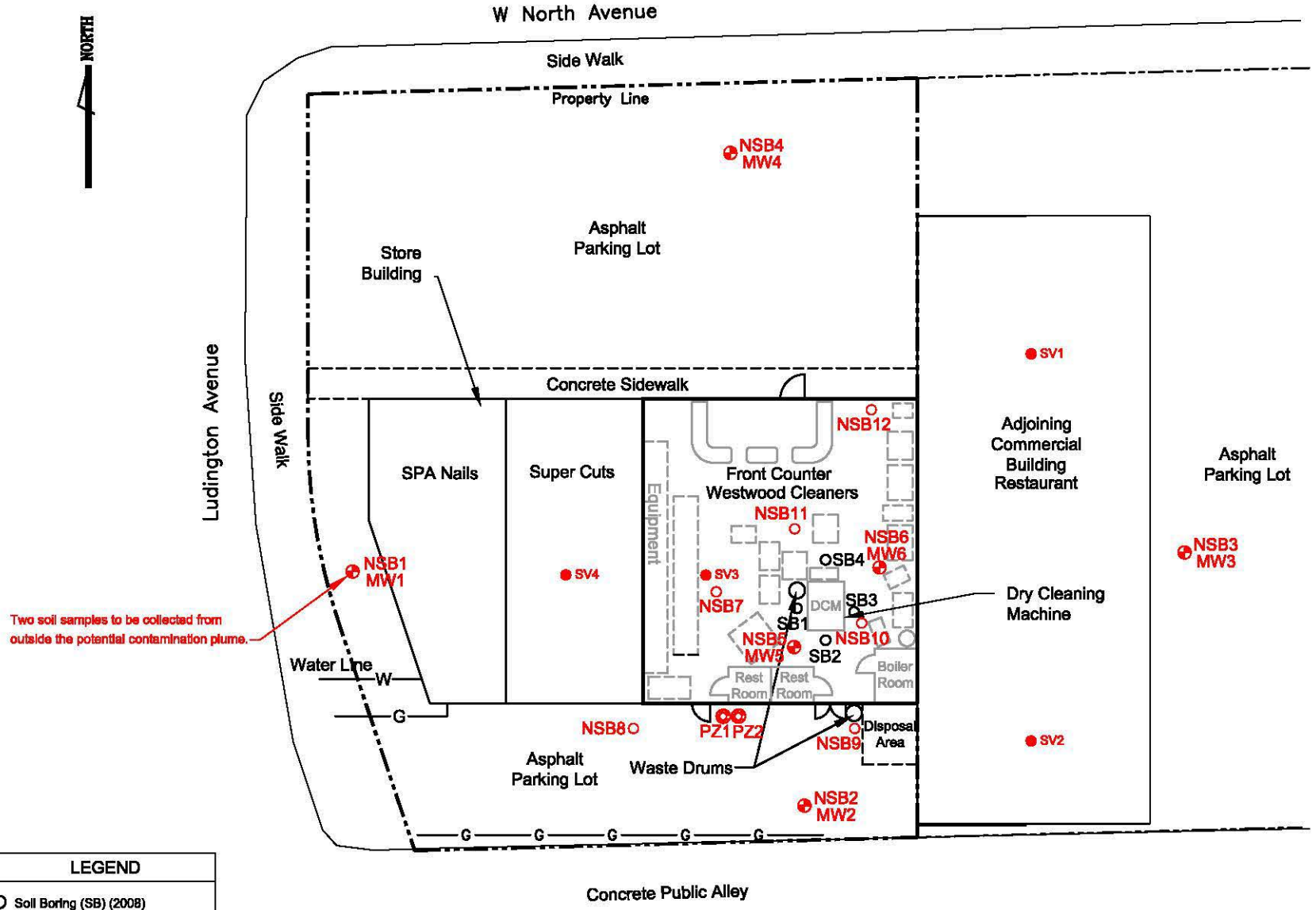
SCALE

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.	3
FIGURE NAME	Proposed Sampling Location Map		
ADDRESS	8731 West North Avenue, Wauwatosa, WI 53226		

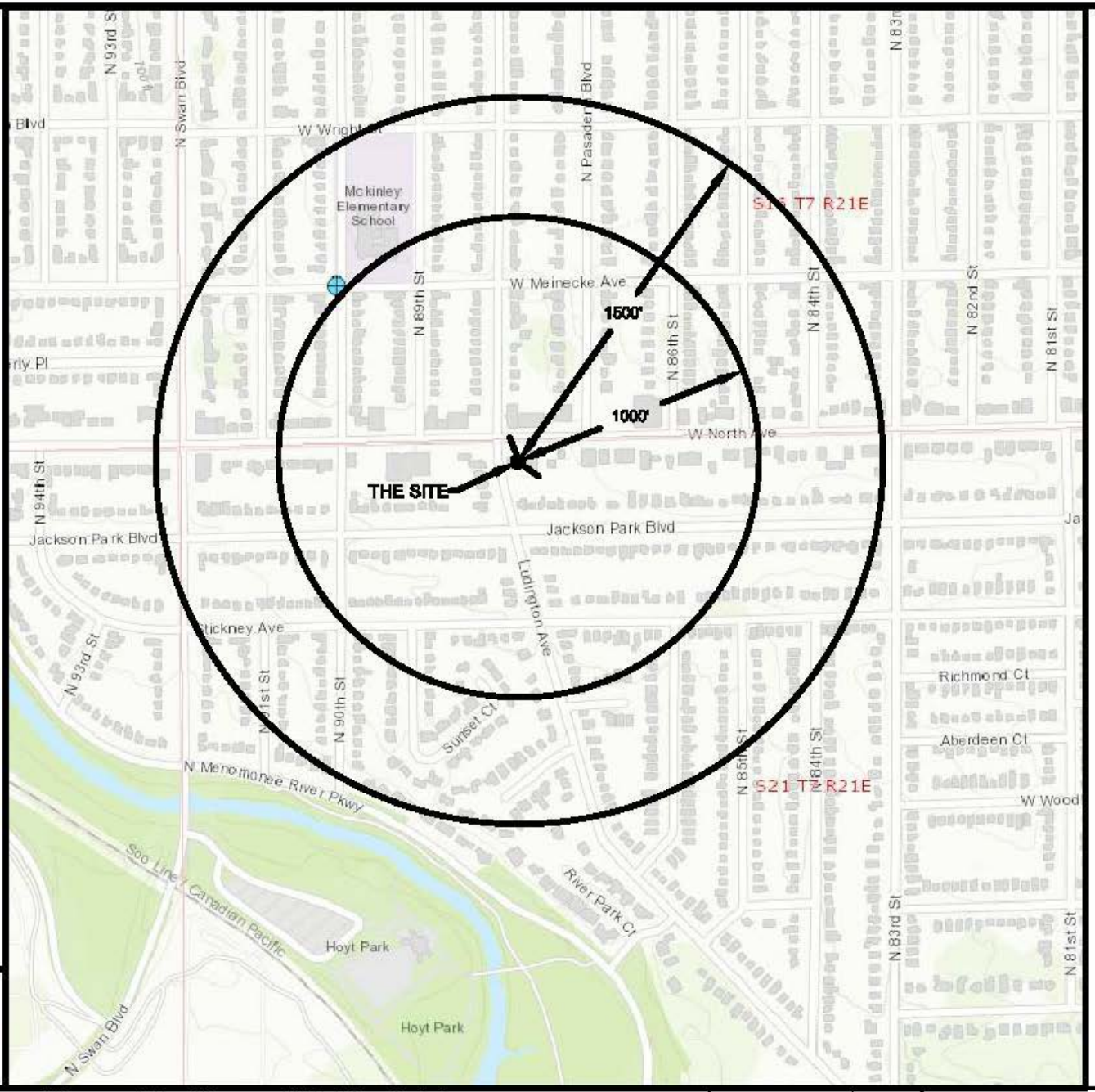
SCALE

0 25' 50'

HYDRODYNAMICS CONSULTANTS, INC.

5403 Patton Dr. Unit 215, Lisle, IL 60532

Tel: (630) 724-0098, HydrodynamicsConsultants.com



LEGEND

WATER WELL

SITE NAME	Westwood Dry Cleaners (#02-41-552537)	FIGURE NO.	4
FIGURE NAME	Water Well Survey Results : Historic Well Construction Reports (1930-1989) Wisconsin Geological & Natural History Survey		
ADDRESS	8751 West North Avenue, Wauwatosa, WI 53226		

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

APPENDIX I

State of WIsconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

DERF Site Investigation Bid Summary
Consultant Selection Cover Sheet

Notice: Use this form to notify the Department of Natural Resources of the consultant you are selecting to conduct a site investigation and to submit and summarize the bids required in the Dry Cleaner Environmental Response Fund (DERF) Program. This form is authorized under s. 292.65, Wis. Stats. and s. NR 169.23, Wis. Adm. Code. Completion of this form is mandatory for any person applying for DERF reimbursement. Persons who do not submit a completed form will not be eligible for reimbursement under DERF. Personal information will be used to manage the DERF program, and be made available to requesters under Wisconsin's Open Records laws (ss. 19.32-19.39, Wis. Stats.) and requirements.

Complete the following information and submit it to your DNR regional project manager. Copy this form as necessary.

Site Information

Site name:	**Facility Name:** Westwood Cleaners	**BRRTS #** 02-41-552537

Consultant Selected

Consultant Name: Hydrodynamics Consultants, Inc.	**Consultant Address:** 5403 Patton Dr. Suite 215, Lisle, IL 60532

Summary of Costs:

Consultant Name: Dakota Intertek Corp.	
Consulting costs:	$21,000.00
Drilling costs:	$7,900.00
Analytical costs:	$8,800.00
Miscellaneous costs:	$6,000.00
Total Costs:	$43,700.00

Consultant Name: Hydrodynamics Consultants	
Consulting costs:	$14,940.00
Drilling costs:	$9,361.00
Analytical costs:	$7,770.00
Miscellaneous costs:	$3,600.00
Total Costs:	$35,671.00

Consultant Name: Quality Environmental Solutions	
Consulting costs:	$15,300.00
Drilling costs:	$7,800.00
Analytical costs:	$7,320.00
Miscellaneous costs:	$1,650.00
Total Costs:	$32,070.00

Justification for Selection:

Optional 4th bid information:

Consultant Name:	
Consulting costs:	
Drilling costs:	
Analytical costs:	
Miscellaneous costs:	
Total Costs:	

Applicant Information and Certification

I certify that the information contained above is true and correct to the best of my knowledge.

Applicant Name: Dong J. Sin		Date	
Street Address: 8731 W. North Ave	City: Wauwatosa	State: WI	Zip Code: 53226
Signature			

Department Use Only

Project Manager Approval Signature	Phone Number	Date

If not approved, reason for non-approval:

Consultant Name: HDC Inc.
Site Name: Westwood Cleaners
BRRTS #02-41-552537
WDNR FID #241836100

DERF Site Investigation Bid Sheet
Consultant Bid Summary

Site Information

Site Name: Westwood Cleaners

Consultant Name: Hydrodynamics Consultants, Inc. (HDC Inc.)	Applicant Name: Mike Wan

Bid Summary

Drilling Costs Total =	**$9,361.00**
Analytical Costs Total =	**$7,770.00**
Consulting Costs Total =	**$14,940.00**
Misc Costs Total =	**$3,600.00**
Grand Total =	**$35,671.00**

I certify that the costs are an accurate estimate of my total projected costs for the site investigation and I understand and will adhere to s.292.65 Stats. and ch NR 169, Wis. Adm. Code.

Consultant Signature	6/18/2018

Please attach to these forms a written narratige specifying how the tasks outlined in these sheets will be performed.

Consultant Name: HDC, Inc.
Site Name: Westwood Cleaners
BRRTS #02-41-552537
WDNR FID #241836100

DERF Site Investigation Bid Sheet
Drilling Costs

Drilling Costs						
Task	Interval	Number of Borings or Wells	Number of Days	Total Number Feet Drilled	Cost/feet, Day or Well	Total Cost
Well installation and Completion						
1" to 2" diameter PVC Wells	_0 ft to 15__ft	6			$230	$1,380.00
	_0__ ft to _20__ ft					
2" diameter PVC piezometers	_0__ ft to _20__ ft	2			$260	$520.00
	> ___ ft					
Decontamination Costs		Included in Soil Boring				$0.00
Mobilization Costs		Included in Soil Boring				$0.00
Auger Borings (continuous sampling)						
	0 ft to 16 ft					
	___ ft to ___ ft					
	___ ft to ___ ft					
	> ___ ft					
Decontamination Costs		Included in above cost per well.				
Mobilization Costs		Included in Soil Boring				
Auger Borings (specify split spoon sampling interval)						
Piezometer borings without sampling	0 ft to 20 ft	2			$300	$600.00
	___ ft to ___ ft					
	___ ft to ___ ft					
	> ___ ft					
Decontamination Costs			1		$250	$1.00
Mobilization Costs			1		$200	$200.00
Direct Push Borings (per point)						
Soil Boring	< 16 ft depth	12			$350	$4,200.00
	___ ft - __ ft depth					
	> ____ ft depth					
Decontamination Costs			2		$250	$500.00
Mobilization Costs			2		$200	$400.00
Well Development (if done by subcontractor)						
	Monitoring Wells					
	Piezometers					
	Recovery Wells					
Other						
Drums		2			$80	160
Flush Mount Covers		8			$50	400
Protector Pipes						0
Sub-Slab soil vapor sampling port installation & abandonment		4			$150	600
Monitoring well development		8			$50	400
Total Drilling Costs						$9,361.00

Consultant Name: HDC Inc.
Site Name: Westwood Cleaners
BRRTS #02-41-552537
WDNR FID #241836100

DERF Site Investigation Bid Sheet
Analytical Costs

Parameter	WI Certified Lab			Field Test/Field Kit			Mobile Lab			
	$/ sample	# samples	Method Used	$/ sample	# samples	Method Used	$/Sample $/Day	# Samples # Days	Method Used	Total Costs
Solids Analysis										
VOCs	$120	36	SW-846 Method 8260B							$4,320.00
TCLP										$0.00
RCRA Metals										$0.00
Duplicate Analyses										$0.00
Blank Analyses										$0.00
Other: TOC	$90	2	ASTM D 2974-87							$180.00
										$0.00
Water Analysis (low flow sampling assumed unless otherwise indicated at bottom of this sheet)										
VOCs	$120	8	SW-846 Method 8260B							$960.00
Nitrate*										$0.00
Dissolved Oxygen*										$0.00
Temperature*										$0.00
Ferrous Iron*										$0.00
Sulfate*										$0.00
Sulfide*										$0.00
ORP*										$0.00
pH*										$0.00
TOC*										$0.00
Alkalinity*										$0.00
Chloride*										$0.00
Spec. Conductance*										$0.00
Ethene/Ethane/Methane*										$0.00
Hydrogen*										$0.00
Carbon Dioxide*										$0.00
RCRA Metals										$0.00
Duplicate Analyses	120	1	SW-846 Method 8260B							$120.00
Blank Analyses	120	1	SW-846 Method 8260B							$120.00
Other: (Specify)										$0.00
Air Analysis										
VOCs	$390	4	TO-15							$1,560.00
TCE										$0.00
PCE (minimum detection limit is <10 ppbv)										$0.00
Other: Tracer Analysis	$0	5	TO-15							$0.00
Duplicate	390	1								$390.00
Waste Analyses (soil/water)										
VOCs	120	1	SW-846 Method 8260B							$120.00
Miscellaneous (specify)										
										$0.00
Charge for Mobile Lab (indicate # days and daily fee)										
Total Analytical Costs										$7,770.00

* Natural Attenuation parameters required for consideration of NA as remedy.

Consultant Name: HDC Inc.
Site Name: Westwood Cleaners
BRRTS #02-41-552537
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DERF Site Investigation Bid Summary
Consultant Costs

		Hours/Task																			
																	Other (specify)				
Position (specify)	Hourly Rate	Workplan Development	Access	Receptor Survey	Waste Determination	Drilling Oversight	Soil Sampling	Drilling sampling	Well Development	Hydraulic Conductivity Test	Groundwater sampling	Soil gas/vapor intrusion survey	SSRCL calculations (contained out or remedial actions)	SI Report preparation	RAOR Report preparation	Project Management	**Total Hours**			Total Costs
Professional Staff																					
Sr. Prof. Engineer	160	8	2	8	4							6	8	8	8	8	60			$9,600.00
																				$0.00
																				$0.00
																				$0.00
																				$0.00
Field Staff																				$0.00
Prof. Engineer	135						16		4	4	4						28			$3,780.00
Senior Technician	60											6					6			$360.00
																				$0.00
Office Support Staff																				$0.00
Sr. Admin. Assistant	50	8											8				16			$800.00
Sr. Draftsperson/CAD	50	4												4			8			$400.00
																				$0.00
Total Consulting Costs																				**$14,940.00**

Consultant Name: HDC Inc.
Site Name: Westwood Cleaners
BRRTS #02-41-552537
WDNR FID #241836100

DERF SIte Investigation Bid Summary Sheet
Miscellaneous Costs

Major Activity	Specifications	Commodity Unit (specify)	Unit Rate	Number of Units	Total Cost
IDW Disposal					
	Non-Hazardous				
Site Investigation Waste Disposal	Hazardous	Drums	$900	2	$1,800.00
Equipment Rental (list and include shipping costs if applicable)					
Field Supplies (list)					
Supplies, PID meter, etc.	Lump Sum	Site Investigation	$900	1	$900.00
Mobilization (crew, equipment, etc.)	Travel to & from site	each trip	$300	3	$900.00
Surveying					
Personal Protection Equipment (list)					
Sample Shipping Costs					
Other (specify)					
Total Miscellaneous Costs					$3,600.00

Reminders: DERF does not reimburse for attorney, closure or GIS fees. Mileage and meals are also non-reimbursable. Also, costs to prepare a reimbursement application and discuss the application with the department are not reimburseable. No expedited shipping w/o prior PM approval.