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

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 not 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		
Kappen	Brian		EnviroForensics, LLC		
Mailing Address			City	State	ZIP Code
N16W23390 Stone Ridge Dr, Suite G			Waukesha	WI	53188
Phone # (include area code)	Fax # (include area code)		Email		
(262) 290-4001	(317) 972-7875		bkappen@enviroforensics.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:

Environmental consultant and agent for owner.

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

Contact Last Name	First	MI	Organization/ Business Name		
Kappen	Brian		EnviroForensics, LLC		
Mailing Address			City	State	ZIP Code
N16W23390 Stone Ridge Dr, Suite G			Waukesha	WI	53188
Phone # (include area code)	Fax # (include area code)		Email		
(262) 290-4001	(317) 972-7875		bkappen@enviroforensics.com		

Property Owner (if different from requester)

Contact Last Name	First	MI	Organization/ Business Name		
Martino	Dan		Martino's Master Dry Cleaners		
Mailing Address			City	State	ZIP Code
7513 41st Avenue			Kenosha	WI	53142
Phone # (include area code)	Fax # (include area code)		Email		
(262) 694-7858					

Section 2. Property Information

Property Name			FID No. (if known)	
Martino's Master Drycleaners			230007910	
BRRTS No. (if known)		Parcel Identification Number		
02-30-287150		12-223-31-138-001		
Street Address		City	State	ZIP Code
4700 7th Avenue		Kenosha	WI	53140
County	Municipality where the Property is located	Property is composed of:		Property Size Acres
Kenosha	◉ 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 4. Request for Liability Clarification

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. **[Numbers in brackets are for DNR Use]**

☐ "Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the real Property, and/or the personal Property and fixtures;

(2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;

(3) the date the environmental assessment was conducted by the lender;

(4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.

(5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.

(6) a copy of the Property deed with the correct legal description; and,

(7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).

(8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292. 21(1)(c)2.,h.-i., Wis. Stats.:

h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.

i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

☐ "Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the Property;

(2) the date of Property acquisition by the representative;

(3) the means by which the Property was acquired;

(4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;

(5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and

(6) a copy of the Property deed with the correct legal description.

☐ Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

☐ hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];

☐ Perceived environmental contamination - [649];

☐ hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or

☐ solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of $700, a summary of the environmental liability clarification being requested, and the following:**

(1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).

(2) current and proposed ownership status of the Property;

(3) date and means by which the Property was acquired by the LGU, where applicable;

(4) a map and the ¼, ¼ section location of the Property;

(5) summary of current uses of the Property;

(6) intended or potential use(s) of the Property;

(7) descriptions of other investigations that have taken place on the Property; and

(8) (for solid waste clarifications) a summary of the license history of the facility.

Section 4. Request for Liability Clarification (cont.)

☐ Lease liability clarification - s. 292.55, Wis. Stats. [646]

- **Include a fee of $700 for a single Property, or $1400 for multiple Properties and the information listed below:**

(1) a copy of the proposed lease;

(2) the name of the current owner of the Property and the person who will lease the Property;

(3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;

(4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;

(5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and

(6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

- **Include a fee of $700 and an adequate summary of relevant environmental work to date.**

☐ No Action Required (NAR) - NR 716.05, [682]

- **Include a fee of $700.**

Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.

☐ Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]

- **Include a fee of $700.**

- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

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: Remediation progress memorandum and related attachments.

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: Brian Kappen
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

9/7/2018
Date Signed

Project Manager
Title

262-290-4001
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.

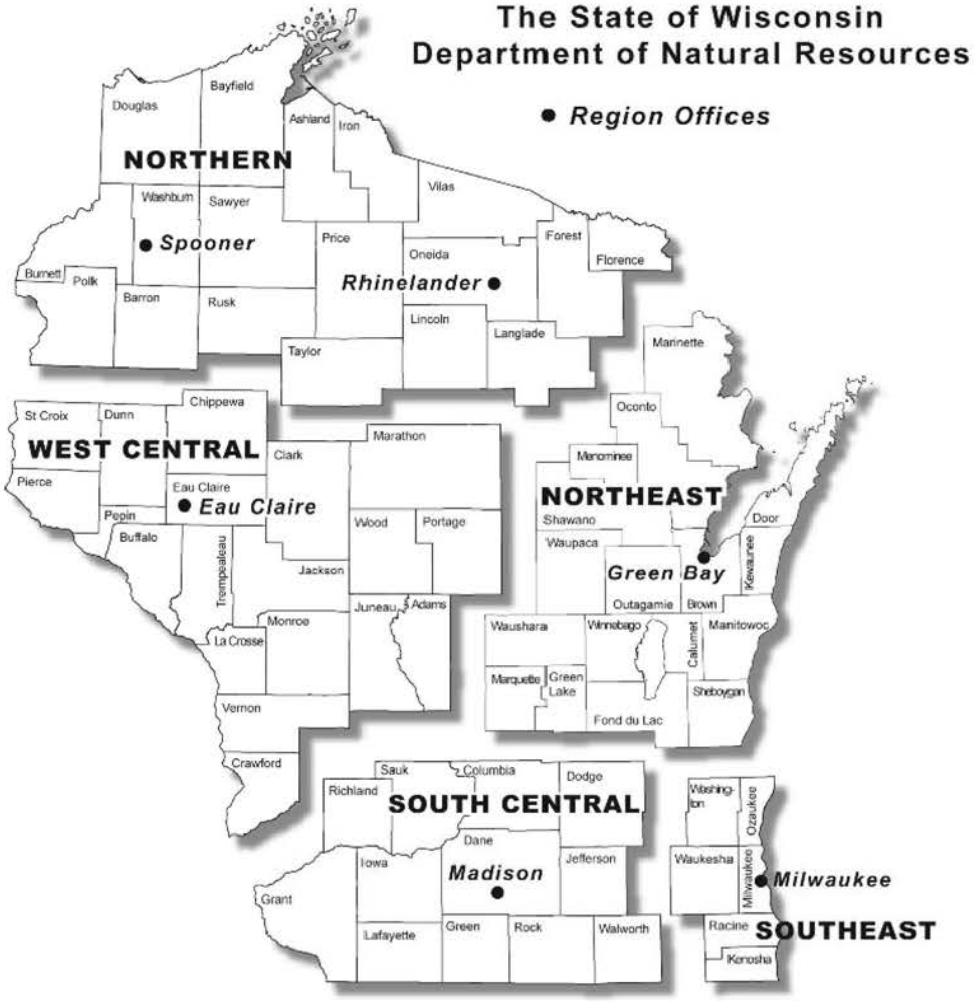
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

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		

MEMORANDUM

To: Doug Cieslak, Wisconsin Dept. Of Natural Resources

From: Brian Kappen, PG, Project Manager
Oran Day, Senior Engineer

Date: September 10, 2018

Subject: Martino's Cleaners 7th Ave – Remediation Update and Recommendations
BRRTS: 02-30-287150

Soil vapor extraction (SVE) remediation at the Martino's Dry Cleaners 7th Avenue property (Site) has been performed to reduce leaching of tetrachloroethene (PCE) to groundwater, reduce partitioning of PCE to subsurface vapor and indoor air, and to bring the site toward closure. Due to diminished mass removal rates, permanent shut down of the SVE system and post-SVE remediation soil sampling is recommended. No additional treatment of unsaturated soils is recommended to achieve closure objectives at this time.

The Site SVE system consists of 15 SVE wells piped to a mechanical SVE unit, as related on **Figure 1**. The SVE system includes a positive displacement blower, air/water separator, and transfer pump. A combination of air and water enter the air/water separator. The water is collected within the separator and discharged by the transfer pump to a sanitary sewer, while the air passes through the blower and is discharged to the atmosphere. A process and instrumentation diagram is presented on **Figures 2a and 2b**.

Full scale system startup was performed in June 7, 2017. Since that time, the system has operated for 7,361 hours, or approximately 308 days.

The effluent air stream has been sampled during system operation according to the frequency specified in Wisconsin Administrative Code (WAC) Chapter 419.07. All samples were analyzed for volatile organic compounds (VOCs) by US EPA Method TO-15. Mass removal rates and total mass removed have been calculated based on discharge concentrations, system flow rates, and operational time periods, as related on the mass removal table (**Table 1**). Effluent concentrations during that period have dropped from near 9,000 micrograms per cubic meter ($\mu g/m^3$) to between approximately 200 and 700 $\mu g/m^3$. The removal rate has been asymptotic since September of 2017, as can be inferred by the concentration versus time data plotted on **Figure 3**. Note that the mass removal as presented on the mass removal table and graph may be biased low. An analysis of expected blower performance suggests that actual mass removal rates may be up to three (3) times higher than the rates presented (see *Performance Curve Calculation* columns on **Table 1**). The blower should be capable of moving a larger volume of air than is indicated by the direct flow rate measurements. Although a specific cause has not been identified, there could be an issue with the measurement apparatus or the associated calculation that leads to an underestimate of the removal rate.

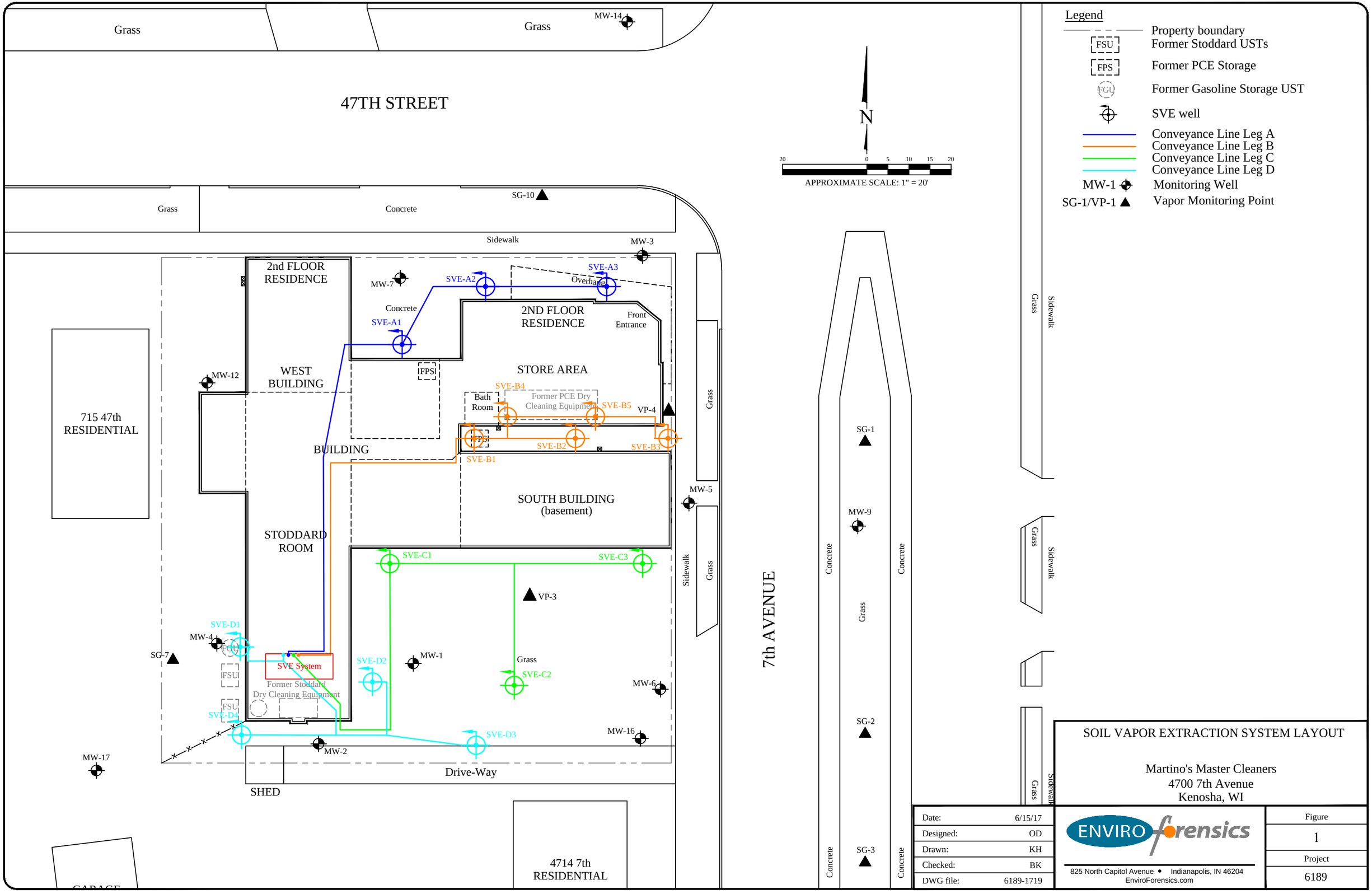
Approximately 170,000 gallons of water have been removed from the subsurface by the system and discharged to the sanitary sewer system under a City of Kenosha permit. This water uptake rate is relatively significant for an SVE system. Historically, the water table at the Site generally fluctuated between approximately 6.5 and 8 feet below grade. Due to the shallow water table and the need to avoid influence of conveyance trenching on subsurface air entrainment by the SVE system, the SVE well screens were constructed immediately above the water table from 5 to 6.5 feet below grade. This screen interval was intended to target localized contaminated areas and provide a buffer between the underlying water table and the overlying conveyance system. However, a change in subsurface conditions occurred following extraction well installation. During system operation, the water table was recorded as shallow as 3.5 feet below grade, which resulted in occlusion of the screens in some extraction wells and the relatively high groundwater removal rates.

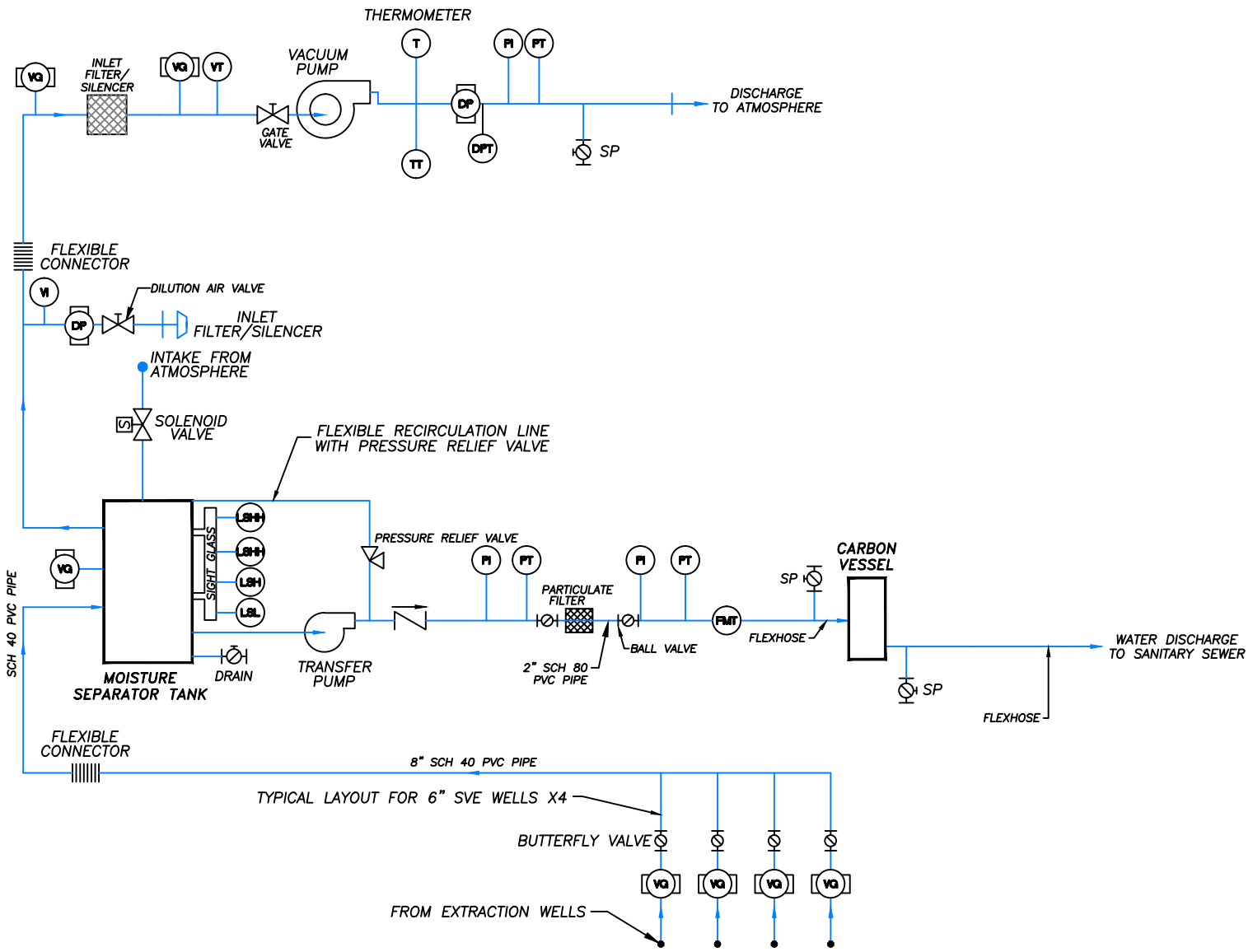
To further investigate options for optimizing mass removal, during the June 27, 2018 operation and maintenance (O&M) event EnviroForensics staff measured depth to groundwater in select SVE wells and measured VOC concentrations at accessible SVE wellheads using a photo-ionization detector (PID). The groundwater data indicated that many well screens were occluded in part or in full by water. The PID data indicated SVE wellhead concentrations generally ranged between approximately 0.7 and 1.2 parts per million (ppm). Based on available information, EnviroForensics concluded that the system was fully optimized as built and that SVE efficacy is now too limited to justify continued operation. It is recommended that system operation permanently cease, and soil sampling be performed to identify post-remediation concentrations. EnviroForensics is requesting a written WDNR response to this memo with opinions regarding SVE remediation progress and/or concurrence with these recommendations.

Direct treatment of contaminated groundwater via injection is also being considered to advance the site toward closure. A general approach for groundwater treatment that consisted of in-situ chemical reduction (ISCR) combined with enhanced reductive dechlorination (ERD) was provided in the 2015 *Site Investigation and Remedial Action Options Report*. That approach remains valid; however, EnviroForensics is updating the groundwater treatment evaluation given the rapidly evolving remedial product offerings and experience with ISCR/ERD implementation at several other sites over the past few years. If groundwater treatment is proposed, a treatment plan will be provided as part of an Injection Request prepared in accordance with WDNR Publication RR-935.

TABLE 1
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL DATA
Martino's Master Dry Cleaners
4700 7th Ave, Kenosha, Wisconsin

	Pitot Tube Calculation		*Performance Curve Calculation*						Pitot Tube Calculation		*Performance Curve Calculation*	
Sample Date	**Flow Rate SCFM**	**Flow Rate SCFM (m^3/min)**	***Flow Rate SCFM***	***Flow Rate SCFM (m^3/min)***	**VOC Concentration ug/m^3**	**VOC Concentration lbs/m^3**	**Duration hrs**	**Duration mins**	**Mass Removed lbs**	**Cumulative Mass lbs**	***Mass Removed lbs***	***Cumulative Mass lbs***
3/4/2015							0		0.03	0.03	*0.03*	*0.03*
6/7/2017	230	6.5	*753.4*	*21.3*	8,911	0.000020	4	246	0.03	0.06	*0.10*	*0.13*
6/8/2017	230	6.5	*753.4*	*21.3*	3,110	0.000007	18	1,098	0.05	0.11	*0.16*	*0.29*
6/9/2017	231	6.6	*763.1*	*21.6*	2,331	0.000005	26	1,578	0.05	0.16	*0.18*	*0.47*
6/15/2017	244	6.9	*721.3*	*20.4*	1,050	0.000002	142	8,514	0.14	0.30	*0.40*	*0.87*
6/22/2017	229	6.5	*753.4*	*21.3*	1,186	0.000003	164	9,858	0.17	0.47	*0.55*	*1.42*
6/29/2017	301	8.5	*873.2*	*24.7*	1,735	0.000004	170	10,194	0.33	0.80	*0.96*	*2.38*
7/7/2017	300	8.5	*835.1*	*23.6*	2,060	0.000005	192	11,544	0.44	1.24	*1.24*	*3.62*
8/2/2017	298	8.4	*835.1*	*23.6*	1,010	0.000002	619	37,140	0.70	1.94	*1.96*	*5.58*
9/6/2017	354	10.0	*1,075.0*	*30.4*	692	0.000002	838	50,274	0.77	2.71	*2.34*	*7.92*
10/6/2017	429	12.2	*1,097.1*	*31.1*	583	0.000001	1,429	85,752	1.34	4.05	*3.42*	*11.34*
11/8/2017	207	5.9	*785.6*	*22.2*	241	0.000001	790	47,418	0.15	4.20	*0.56*	*11.90*
12/11/2017	273	7.7	*817.8*	*23.2*	397	0.000001	501	30,084	0.20	4.40	*0.61*	*12.51*
1/8/2018	355	10.1	*987.0*	*28.0*	125	0.000000	935	56,115	0.16	4.56	*0.43*	*12.94*
2/14/2018	352	10.0	*965.0*	*27.3*	747	0.000002	1,084	65,022	1.07	5.63	*2.93*	*15.87*
3/6/2018	357	10.1	*987.0*	*28.0*	471	0.000001	432	25,920	0.27	5.90	*0.75*	*16.62*
4/9/2018	379	10.7	*987.0*	*28.0*	354	0.000001	813	48,798	0.41	6.31	*1.06*	*17.69*
6/27/2018	293	8.3	*876.9*	*24.8*	491	0.000001	353	21,198	0.19	6.50	*0.57*	*18.26*


Legend
Property boundary
Former Stoddard USTs
Former PCE Storage
Former Gasoline Storage UST
SVE well
Conveyance Line Leg A
Conveyance Line Leg B
Conveyance Line Leg C
Conveyance Line Leg D
MW-1 Monitoring Well
SG-1/VP-1 Vapor Monitoring Point
N
APPROXIMATE SCALE: 1" = 20'
47TH STREET
7th AVENUE
Grass
Concrete
Sidewalk
2nd FLOOR RESIDENCE
WEST BUILDING
BUILDING
STODDARD ROOM
2ND FLOOR RESIDENCE
Overhang
Front Entrance
STORE AREA
Bath Room
Former PCE Dry Cleaning Equipment
SOUTH BUILDING (basement)
715 47th RESIDENTIAL
4714 7th RESIDENTIAL
SHED
Drive-Way
SVE System
Former Stoddard Dry Cleaning Equipment
SVE-A1
SVE-A2
SVE-A3
SVE-B1
SVE-B2
SVE-B3
SVE-B4
SVE-B5
SVE-C1
SVE-C2
SVE-C3
SVE-D1
SVE-D2
SVE-D3
SVE-D4
VP-3
VP-4
SG-1
SG-2
SG-3
SG-7
SG-10
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-9
MW-12
MW-14
MW-16
MW-17
FPS
FSU
SOIL VAPOR EXTRACTION SYSTEM LAYOUT
Martino's Master Cleaners
4700 7th Avenue
Kenosha, WI
Date: 6/15/17
Designed: OD
Drawn: KH
Checked: BK
DWG file: 6189-1719
ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com
Figure
1
Project
6189



No.	Date	Revision	Approved

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Checked:	CM
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PROCESS AND INSTRUMENTATION DIAGRAM FOR REMEDIATION SYSTEM
Martino's Master Cleaners
4700 7th Avenue
Kenosha, WI

Figure 2a

Project 6189

VALVE AND PIPING SYMBOLS

- GATE VALVE
- SOLENOID VALVE
- CHECK VALVE
- BALL VALVE
- SAMPLING PORT
- EXHAUST TO ATMOSPHERE (INSIDE)
- EXHAUST TO ATMOSPHERE (OUTSIDE)
- PRESSURE RELIEF VALVE
- VACUUM GAUGE

ABBREVIATIONS

DP	DIFFERENTIAL PRESSURE
DO	DISSOLVED OXYGEN
FC	FAIL CLOSED
FI	FAIL INDETERMINATE
FL	FAIL LOCKED
FO	FAIL OPEN
FQ	FAIL QUANTIFIER
HOA	HAND–OFF–AUTOMATIC
HS	HAND SWITCH
IL	INDICATOR LIGHT
I/I	CURRENT–TO–CURRENT
I/P	CURRENT–TO–PNEUMATIC
KC	PROGRAM CONTROLLER
LC	LEVEL CONTROLLER
LEL	LOWER EXPLOSIVE LIMIT
LR	LOCAL–REMOTE
LS	LEVEL SWITCH
LSHH, LSL, LSH	LIQUID SWITCH HIGH / LOW
M	MOTOR
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
P	PRESSURE
PI	PRESSURE INDICATOR
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
PRV	PRESSURE RELIEF VALVE
PSH	PRESSURE SWITCH – HIGH
SG	SIGHT GLASS
SP	SAMPLING PORT
UA	UNIVERSAL ALARM
FMT	FLOW METER TOTALIZER
AFM	AIR FLOW METER

EQUIPMENT SYMBOLS

- PUMP
- BLOWER

LINE SYMBOLS

- PROCESS PIPES OR CHANNELS
- ELECTRIC SIGNAL
- COMPRESSED AIR LINE

PROCESS PIPING IDENTIFICATION

PROCESS PIPE

PIPE DIAMETER (INCHES)

2" XXX–YY–Z

- INSULATION CLASS
- PIPING MATERIAL IDENTIFICATION
- PROCESS LINE ABBREVIATION

GENERAL INSTRUMENT SYMBOLS

- LOCALLY MOUNTED
- PANEL MOUNTED
- REAR–OF–PANEL MOUNTED
- I — INTERLOCK
- P — PURGE

INSTRUMENT IDENTIFICATION

FIT 100A — FIT–100A

- SUFFIX (NOT NORMALLY USED)
- LOOP NUMBER
- SUCCEEDING LETTERS
- FIRST LETTER

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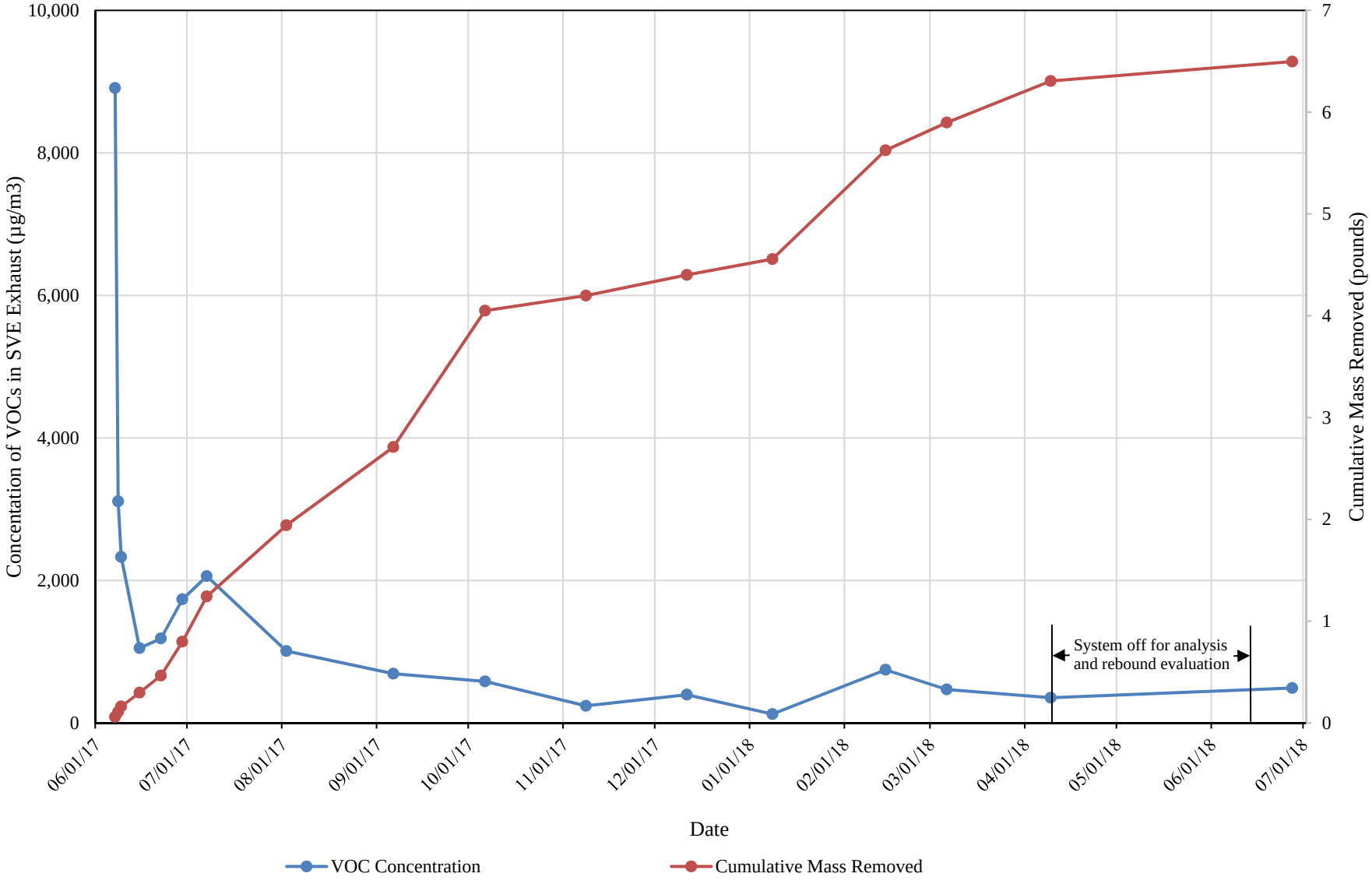
PROCESS AND INSTRUMENTATION LEGEND
Martino's Master Cleaners
4700 7th Avenue
Kenosha, WI

Figure 2b

Project 6189

Figure 3

SVE System Mass Removal Graph

Martino's Master Dry Cleaners - 4700 7th Ave, Kenosha, Wisconsin