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December 23, 2015

Mr. Doug Cieslak  
Wisconsin Department of Natural Resources  
9531 Rayne Rd, Suite 4  
Sturtevant, WI 53177

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BY: .....

**Re: Site Investigation Report  
Martino's Master Dry Cleaners  
3917 52<sup>nd</sup> Street  
Kenosha, Wisconsin 53144  
BRRTS# 02-30-552186**

Dear Mr. Cieslak:

This is in response to a letter received from you on November 18, 2015 regarding the September 15, 2015 Site Investigation Report (SIR) for the Martino's Master Dry Cleaners (Martino's) site located at 3917 52<sup>nd</sup> Street in Kenosha, Wisconsin. In the letter, you have requested investigative work to satisfy the requirements of NR 716. EnviroForensics provides the following responses to your bulleted comments/requests in the order that they appear in your November 18<sup>th</sup> letter.

### **Vapor Intrusion Monitoring**

**Bullet #1:** For properties without active sub-slab depressurization systems (SSDS) but with previous air detections of dry cleaner related contaminants, please continue monitoring sub-slab and indoor air vapor concentrations until at least three samples indicate concentrations below Sub-slab Vapor Risk Screening Levels (SS VRSL) or Vapor Action Levels (VAL). At least one sub-slab and one indoor air sample should be collected during winter frozen ground conditions.

**EnviroForensics Response #1:** Current sub-slab vapor sampling guidance (PUB-RR-986) indicates three (3) sampling events may be necessary to confirm the vapor intrusion pathway at residential properties. However, for commercial properties, the WDNR has been applying a site-specific approach to each vapor intrusion assessment.

As can be seen in Table 9 of the Site Investigative Report (SIR) and revised Figure 8 (attached), EnviroForensics collected two (2) rounds of sub-slab vapor samples to ensure

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that one (1) round was collected during the fall/winter heating months. In addition, EnviroForensics collected paired indoor air samples, which is also not a recommendation for commercial properties in PUB-RR-800, but was performed to ensure that the vapor intrusion pathway was not complete and thus providing a more comprehensive assessment.

As can be seen on Figure 8, the VRSL was exceeded for TCE at the location of SSV-7 during the first sampling event in September of 2014. During the second event in November of 2014, the concentration of TCE did not exceed the VRSL. Paired indoor air samples from both events did not exceed the VALs. The location of SSV-7 is very near the soil and groundwater impacts that have been identified in the adjacent alleyway. It is our intent to implement dual-phase extraction in the alleyway, which contains a component of soil vapor extraction (SVE). During pilot testing, we will measure the pressure field extension from the SVE component to determine if it extends beneath the building slab to mitigate the vapor intrusion risk. If it does not, then a sub-slab depressurization system (SSDS) will be installed to mitigate the risk. EnviroForensics will continue to sample indoor air at each commercial unit not equipped with an SSDS on a biannual basis (summer and winter) until remedial pilot testing has been completed to ensure that the vapor intrusion pathway remains incomplete. This indoor air sampling program will be sufficient to monitor building conditions and given the proposed remedial action, further sub-slab sampling of the commercial spaces is not warranted.

Is there a SSDS or VMS installed in building?

**Bullet #2:** If concentrations exceed action levels additional screening and evaluation should be conducted to determine if other properties should be sampled to define the limits of the vapor conditions that exceed limits.

**EnviroForensics Response #2:** As explained in response #1 above, the VRSL was exceeded for TCE at SSV-7 for one sampling event. No VALs have been exceeded. EnviroForensics will continue to sample indoor air at each commercial unit not equipped with an SSDS on a biannual basis until remedial pilot testing has been completed to ensure that VALs are not exceeded. There are no “other properties” nearby that would be at risk.

**Bullet #3:** Vapor intrusion monitoring should be conducted at 3935 52<sup>nd</sup> Street.

**EnviroForensics Response #3:** This commercial unit and the three (3) adjacent units are constructed on the same monolithic concrete floor slab. As explained in Response #1 above, TCE was detected at a concentration exceeding the VRSL during one sampling event and therefore the proposed remedial plan will address any potential vapor risk.

EnviroForensics will monitor indoor air at this unit on a biannual basis until remedial pilot testing has been completed.

### **Vapor Intrusion Mitigation**

**Bullet #4:** For properties with vapor intrusion mitigation systems installed please submit as-built drawings pressure field extension documentation and operation maintenance plans.

**EnviroForensics Response #4:** The sub-slab depressurization systems (SSDS) installed at the dry cleaner property and adjacent property to the east consist of single extraction points with separate fans. The attached Figure 8 shows the locations of the extraction points and fans with pressure field extension measurements taken at the time of installation. Per your request, EnviroForensics will test the pressure field extensions at both commercial properties in at least two (2) different locations for each property. We will provide additional information regarding system construction such as fan specifications, extraction pipe diameter, air flow controllers, etc. We will also provide operation and maintenance plans for both systems.

### **Groundwater Investigation**

**Bullet #5:** A shallow 2-4 ft. and deeper 8-10 ft. groundwater flow system has been identified at the site. Please map the occurrence of each and explain how they contribute to contaminant migration.

**EnviroForensics Response #5:** Depth to water in most wells has fluctuated between 10 to 15 feet below ground surface seasonally. However, in wells MW-3, MW-7, and MW-8 static groundwater levels are within two feet of ground surface. These non-conforming water levels when mapped with all other wells do not exhibit a continuous groundwater flow field, but instead skew groundwater flow in all directions away from the measured high water levels (see attached Figure 12).

The non-conforming water levels may be due to the geology at this site, which is a complex assemblage of discontinuous layers, lenses, and seams of sand, silt, and clay that are not well sorted. This is soil typically deposited by glacial action. There is also a layer of fill 3-5 feet thick along the alleyway that appears to continue to a lesser thickness under the commercial building. It is not unusual in this type of depositional environment for there to be zones of perched water. It is also not unusual under these conditions for static water levels to yield a potentiometric surface map without definitive or continuous groundwater

flow directions, given that fine clay and silt soils drain slowly and at different rates after precipitation events


EnviroForensics does not feel that further investigations to determine exact hydraulic linkages or mapping of the existing data is practical or needed for remedial planning, and in this type of depositional environment may not even be possible. Groundwater impacts appear to be limited in both depth and lateral extent, and not migrating extensively. We will likely implement actions to treat the higher concentrations in groundwater, along with removal of highly contaminated soil in the source area. Remaining residual groundwater impacts will likely be monitored for natural attenuation.

**Figure Updates:** Update future maps to include buildings addresses and business names, all sample locations, utilities including laterals and stormwater systems.

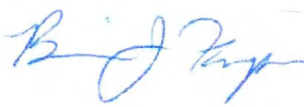
**EnviroForensics Response #6:** Per your request for Figure Updates, we will update any future figures with sample location and utilities including laterals and storm sewer systems. We have used addresses on our figures rather than business names, because these are commercial tenants which can change over time, and that may lead to confusion in later submittals.

We are available to discuss these comments by phone or meeting in person at your convenience. Please email me at [wfassbender@enviroforensics.com](mailto:wfassbender@enviroforensics.com) or call at (414) 982-3988 to determine a schedule.

Sincerely,  
**Environmental Forensic Investigations, Inc.**



Wayne P. Fassbender, PG, PMP  
*Senior Project Manager*



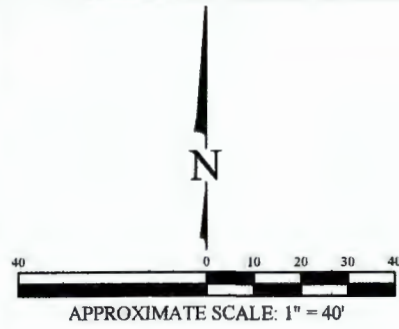
Brian Kappen, PG  
*Project Manager*

Enclosures

Cc: Dan Martino Sr., Martino's Master Drycleaners  
Ted Warpinski, Friebert, Finerty, and St. John

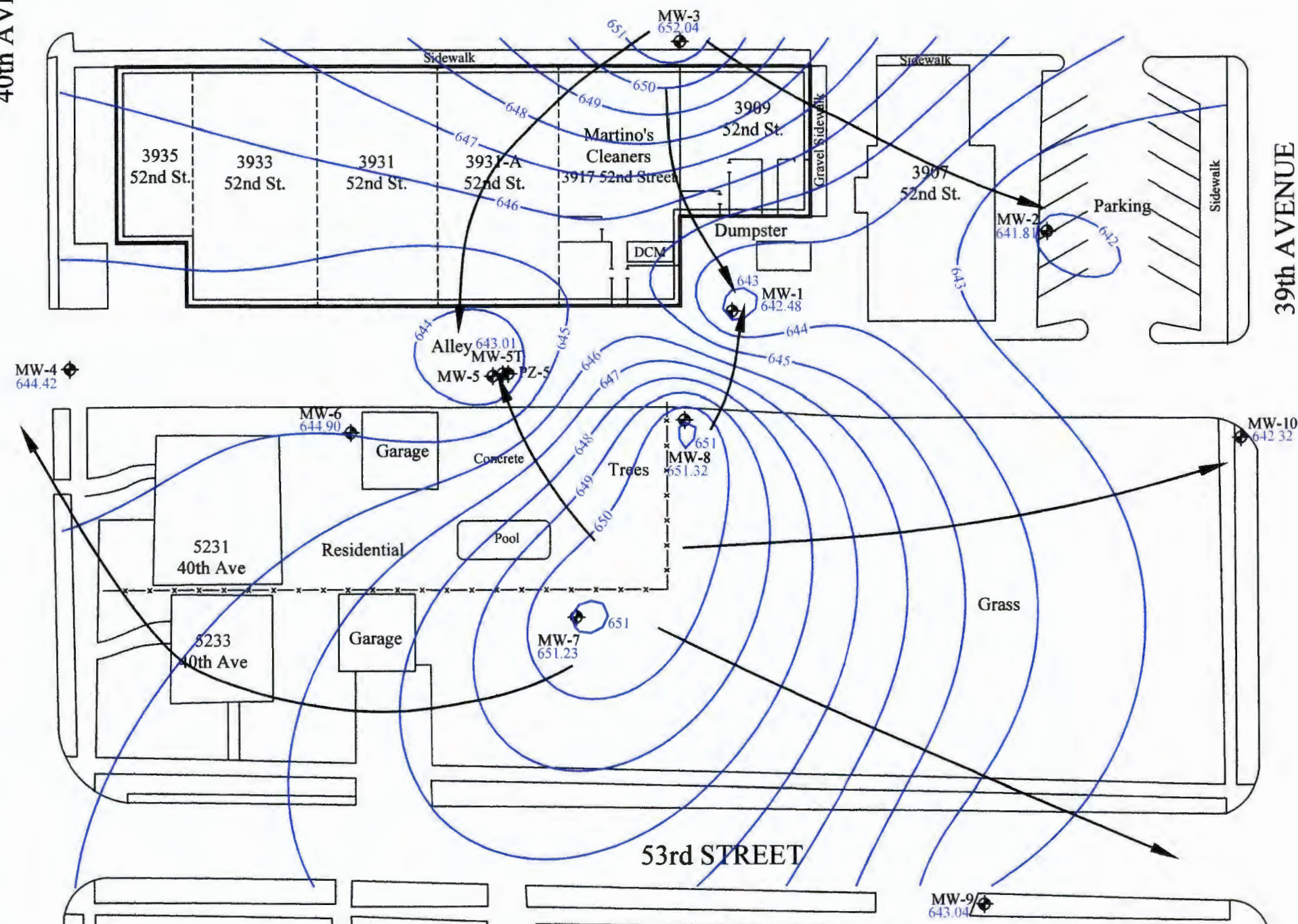


40th AVENUE



Parking Lot

- Legend**
- MW-1 ◆ Monitoring well
  - 642.0 — Groundwater elevation contour
  - 642.48 — Groundwater elevation (feet above mean sea level)
  - ← Approximate groundwater flow direction



39th AVENUE

53rd STREET

**WATER TABLE CONTOUR MAP  
 WITH ALL WELLS MAPPED  
 JUNE 2015  
 Martino's Cleaners  
 3917 52nd Street  
 Kenosha, Wisconsin**

Date:	12/23/15		Figure
Designed:	EB		12
Drawn:	EB		Project
Checked:	BK		6190
DWG file:	6190-0749		

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