

**Via E- Mail**

October 11, 2016

Mr. Billy Meyer  
North Carolina Department of Environmental Quality  
Division of Waste Management, Superfund Section  
Dry Cleaning Solvent Cleanup Program  
1646 Mail Service Center  
Raleigh, NC 27699

**Re: Off-Site Soil Gas Sampling Report  
Easy Wash Dry Cleaners  
Fayetteville, Cumberland County  
DSCA ID # DC260002  
H&H Job No. DS0-15Q**

Dear Billy:

**1.0 Introduction**

Hart & Hickman, PC (H&H) is submitting this letter report to document recent off-site vapor intrusion assessment activities associated with the Easy Wash Dry Cleaners site located at 5308 Bragg Boulevard in Fayetteville, Cumberland County, North Carolina. H&H previously conducted vapor intrusion assessment activities on the source property and adjacent non-source properties between 2008 and 2011 and in 2014. Based on the results of the previous assessment activities and recent groundwater monitoring activities, the Dry-cleaning Solvent Cleanup Act (DSCA) Program requested installation and sampling of a permanent soil gas monitoring point on the commercial property located south of the source property at 5304 Bragg Boulevard (currently occupied by A Cut Above hair salon).

After the subject sampling was completed, H&H was informed that the DSCA Program determined the contamination observed south of the source property was likely originating from a source located cross-gradient to the Easy Wash Dry Cleaners facility and was likely not

associated with the Easy Wash Dry Cleaners site. Based on the DSCA Program's interpretation of site data, they determined Hamont Dry Cleaning facility as the likely source of contamination observed in the vicinity of 5304 Bragg Boulevard. Therefore, the results summarized in this report pertain to impacts associated with the Hamont Dry Cleaning site. A site location map is included as Figure 1, and the site layout is shown on Figure 2.

## 2.0 Sampling Activities

### Soil Gas Monitoring Point Installation

In February 2016, H&H contracted Geologic Exploration to install a permanent subsurface soil gas monitoring point (SGMP-3) adjacent to the off-site building located at 5304 Bragg Boulevard. Based on historical groundwater elevation data, the soil gas monitoring point was installed with a stainless steel hand auger to a depth of approximately 7 ft bgs. The soil gas monitoring point was completed with a 6-inch flush-mount protective manhole cover set inside a concrete pad. Upon completion, the end of the Teflon® sample tubing assembly was secured inside the manhole with a plastic cap. The sample location is depicted on Figure 2.

In March 2016, H&H returned to the site for groundwater monitoring activities and for the collection of a soil gas sample from SGMP-3. However, during the purging process, water was encountered in the sample tubing and H&H was unable to collect a sample at this time. The water encountered in the sample tubing resulted from an elevated water table due to higher than normal rainfall conditions following installation of the monitoring point in February 2016. Therefore, soil gas sampling at the off-site property was postponed until water table elevations declined and dryer seasonal conditions returned.

On September 12, 2016, H&H returned to the site and reinstalled SGMP-3 with a stainless steel hand auger. The soil gas monitoring point was installed above the water table at a shallower depth of approximately 5 ft bgs. A dedicated 5/8-inch diameter, 6-inch long stainless steel sample point joined to 1/4' inch diameter Teflon® tubing was installed in the bottom of the

borehole. Filter sand was then placed from the base of the boring to above the screened interval. The sampling point was completed by placing hydrated bentonite from the top of the filter sand to the surface. Upon completion, a petcock valve was placed on the end of the Teflon® sample tubing assembly and was used to secure the tubing when not in use for sampling.

### Soil Gas Sampling

Following reinstallation, H&H collected a soil gas sample from SGMP-3. Prior to sampling, the soil gas monitoring point was purged using a syringe and Tedlar® bag to evacuate a minimum of three volumes of air from the sampling system. A leak check was performed by placing a shroud around the sampling point and saturating the air within the shroud with helium gas. A helium gas detector was used to determine the concentration of helium in the shroud. The sampling point was then purged into a Tedlar® bag, and the collected vapor was analyzed by the helium gas detector to confirm that the Tedlar® bag did not contain a helium concentration greater than 5% of the helium concentrations detected in the shroud. The soil gas monitoring point passed the helium leak check criteria.

Following purging and a successful leak check, a laboratory-supplied 1-Liter Summa canister with flow regulator was connected to the tubing using a Swagelok® compression fitting to form an air-tight seal. Subsequently, the canister's intake valve was opened to collect the subsurface soil gas sample. The flow regulator was set by the laboratory to collect the samples over a period of approximately 5 minutes (i.e., flow rate of 200 mL/min). Vacuum readings on the Summa canister were recorded prior to and following the 5-minute sampling period to confirm adequate sample volume was collected. Photographs of the leak check, summa canister, and sample location are provided in Appendix A.

After sample collection, the canister was submitted to Con-Test Analytical Laboratory for analysis of the primary constituents of concern at the site, including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride (VC) by EPA Method TO-15. The laboratory analytical report and

chain-of-custody record are provided in Appendix B.

### 3.0 Sampling Results

PCE and its degradation product TCE were detected in soil gas sample SGMP-3 at concentrations of 37,000  $\mu\text{g}/\text{m}^3$  and 22  $\mu\text{g}/\text{m}^3$ , respectively. No other constituents were detected in the soil gas sample. As previously noted, the soil gas impacts are believed to be associated with the Hamont Dry Cleaning site located cross-gradient to the Easy Wash Dry Cleaners source property. The soil gas results are summarized in Table 4 and shown on Figure 2.

To evaluate the potential vapor intrusion risk associated with the detected soil gas concentrations, H&H completed DSCA's soil gas risk calculator for both residential and non-residential exposures. Although the property is zoned for non-residential use and is currently used for commercial purposes, site closure under the DSCA Program includes an evaluation of potential future residential land use scenarios. The completed risk calculators are provided in Appendix B, and a summary of the results is provided in the table below.

Sample ID	Residential		Non-Residential	
	Carcinogenic Risk	Non-Carcinogenic Hazard Index	Carcinogenic Risk	Non-Carcinogenic Hazard Index
SGMP-3	1.0E-04	27	7.9E-06	2.1

To close a site under the DSCA Program, the cumulative carcinogenic risk must be less than 1.0E-05 and the non-carcinogenic hazard index must be less than 1. As shown in the table above, the calculated risks based on the detected soil gas concentrations exceed acceptable levels under both the current non-residential use scenario (hazard index >1) and under a potential future residential use scenario (carcinogenic risk > 1.0E-05 and hazard index >1). Thus, there is a potential for vapor intrusion at unacceptable risk levels.

#### 4.0 Summary and Conclusions

H&H installed and sampled one permanent subsurface soil gas sample point (SGMP-3) adjacent to the building located at 5304 Bragg Boulevard, south of the Easy Wash Dry Cleaners source property. Based on the DSCA Program's interpretation of site data, the Hamont Dry Cleaning facility is the likely source of contamination observed in the vicinity of 5304 Bragg Boulevard. Therefore, the results summarized in this report are likely associated with the Hamont Dry Cleaning site.

Concentrations of PCE ( $37,000 \mu\text{g}/\text{m}^3$ ) and TCE ( $22 \mu\text{g}/\text{m}^3$ ) were detected in soil gas collected near the northwestern corner of the commercial building at 5304 Bragg Boulevard. H&H calculated the potential vapor intrusion risk associated with the detected soil gas concentrations, and the non-carcinogenic risk exceeds acceptable levels under the current non-residential use scenario and both the carcinogenic and non-carcinogenic risks exceed acceptable levels under the residential use scenario. Indoor air sampling is recommended to further evaluate vapor intrusion risk at the 5304 Bragg Boulevard property.

H&H appreciates the opportunity to work with you on this project. If you have any questions or require additional information, please do not hesitate to contact us at 704-586-0007.

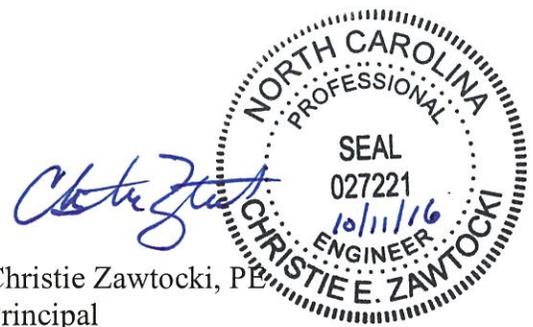
Very truly yours,

*Hart & Hickman, PC*



Jason Soban, PG  
Senior Project Geologist

Attachments



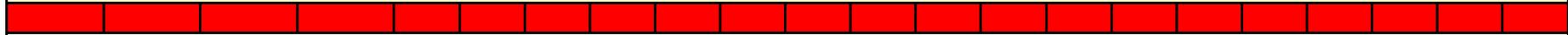
## **TABLES**

**Table 4: Analytical Data for Soil Gas**

**DSCA ID No.: DC260002**

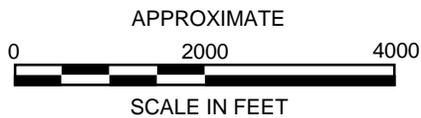
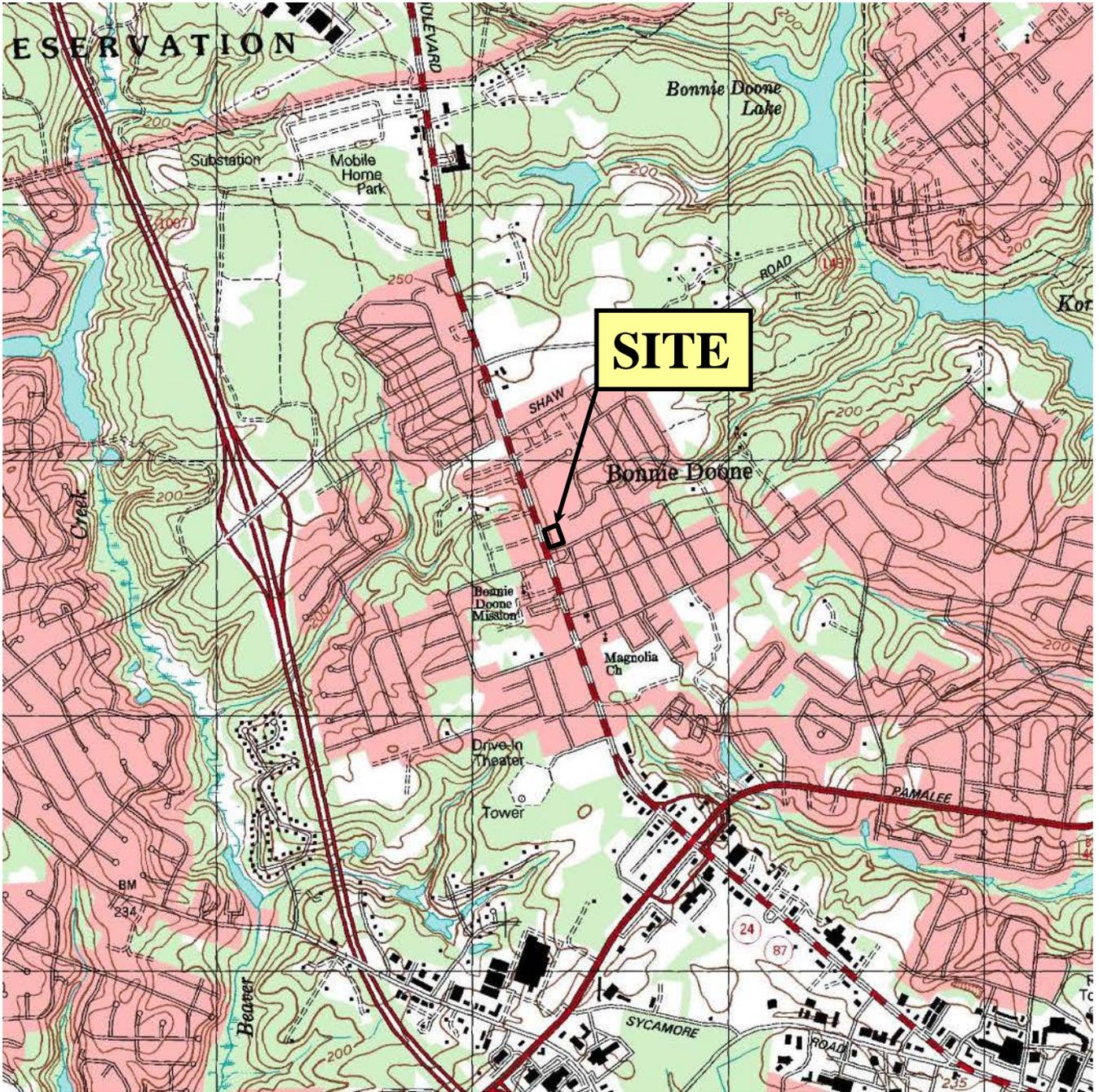
Sample ID	Depth [feet bgs]	Sample Duration <sup>1</sup>	Sampling Date (mm/dd/yy)	Benzene	cis-1,2-Dichloroethylene	Ethylbenzene	Methyl tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethylene	Toluene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride	Xylenes (total)						
				[µg/m <sup>3</sup> ]																
SVMP-1	5	1h	06/22/11	NA	<0.40	NA	NA	NA	<b>11,000</b>	NA	0.52	21	<0.26	NA						
SVMP-2	5	1h	06/21/11	NA	<0.40	NA	NA	NA	540	NA	<0.40	<0.54	<0.26	NA						
SVMP-3	5	1h	06/21/11	NA	<0.40	NA	NA	NA	19	NA	<0.40	<0.54	<0.26	NA						
SGMP-1	9	2h 18m	02/18/14	NA	<0.40	NA	NA	NA	640	NA	<0.40	2.6	0.12 J	NA						
SGMP-2	9	1h 14m	02/18/14	NA	<0.79	NA	NA	NA	36	NA	<0.79	1.4	<0.51	NA						
SGMP-3	5	5m	09/12/16	NA	<7.9	NA	NA	NA	<b>37,000</b>	NA	<7.9	22	<5.1	NA						
MW-3RSG	11.5	34m	02/18/14	NA	17	NA	NA	NA	<b>6,000</b>	NA	<4.0	<b>550</b>	1.2 J	NA						
MW-8SSG	11.5	37m	02/18/14	NA	0.82	NA	NA	NA	310	NA	<0.40	19	<0.26	NA						
DWM Non-Residential SGSLS				--	NE	--	--	--	3,500	--	NE	175	2,790	--						

Notes:  
 1. NA = Not Analyzed; NE = Not Established  
 2. DWM Non-Residential Soil Gas Screening Levels (SGSLs) dated March 2016 are provided for reference.  
 3. J denotes estimated concentration between laboratory reporting limit and method detection limit.  
 4. Sample depths for MW-3RSG and MW-8SSG are the approximate depths to water in these monitoring wells at the time of sampling.



<sup>1</sup> Indicate "G" for grab sample or for longer samples indicate the number of hours followed by "h".

## **FIGURES**

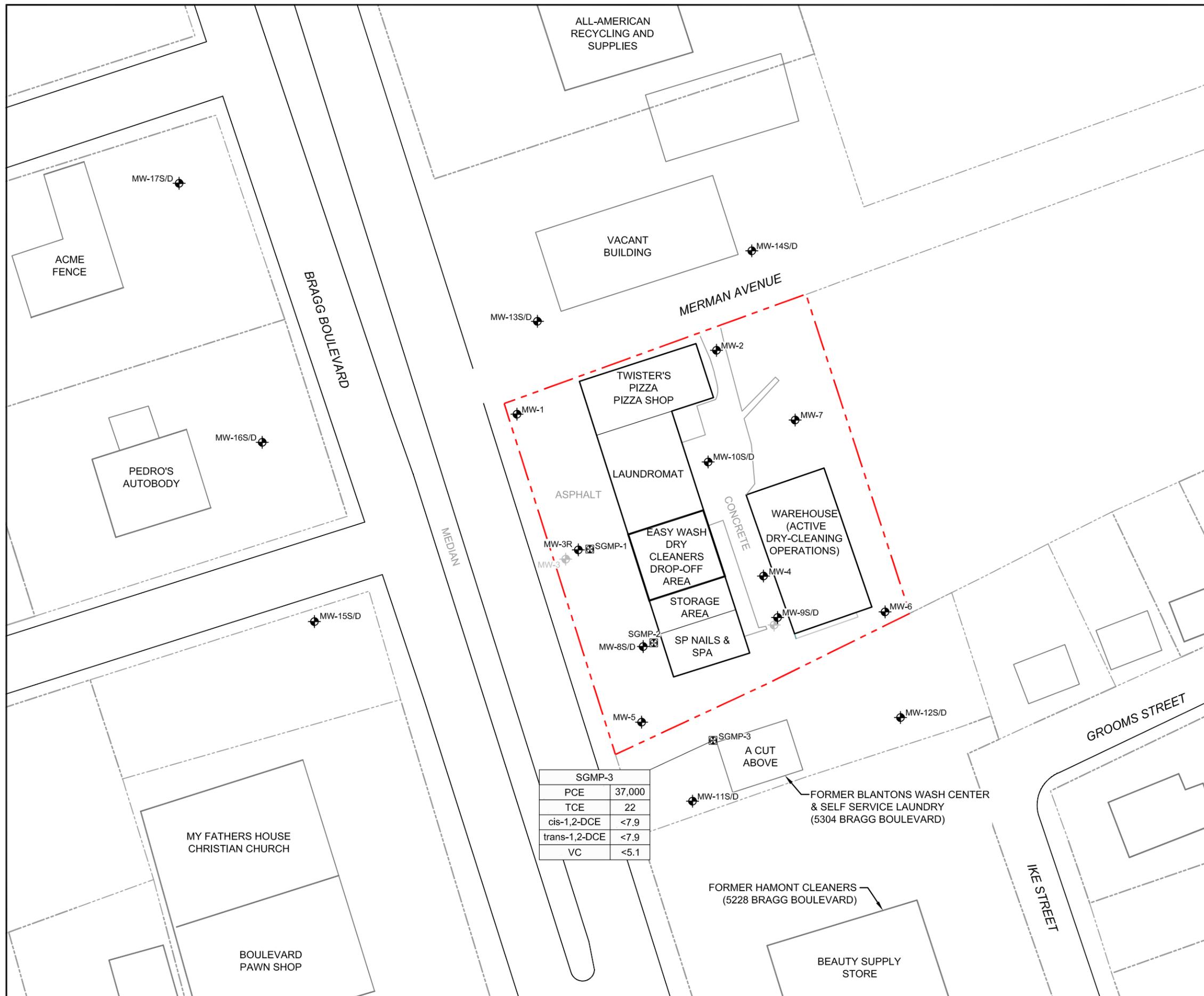


U.S.G.S. QUADRANGLE MAP  
FAYETTEVILLE, NC 1997

QUADRANGLE  
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE		<b>SITE LOCATION MAP</b>	
PROJECT		<b>EASY WASH DRY CLEANERS</b> <b>DSCA ID # DC260002</b> 5308 BRAGG BOULEVARD FAYETTEVILLE, CUMBERLAND COUNTY	
		 2923 S. Tryon Street, Suite 100 Charlotte, NC 28203 704.586.0007(p) 704.586.0373(f)	
DATE:	10-06-15	REVISION NO:	0
JOB NO:	DS0-15	FIGURE:	1

S:\AAA-Master Projects\DCSA - DSO\DSO-15 Easy Wash Drycleaners\Reports\2016-09 Soil Gas Sampling\Figures\DC260002\_20161011\_Figures.dwg, ATT 4, 10/12/2016 4:45:29 PM, zbarfaw



**LEGEND**

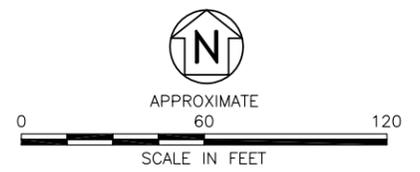
- - - SITE PROPERTY BOUNDARY
- - - OFF-SITE PARCEL
- SITE BUILDING
- OFF-SITE BUILDING
- DRY-CLEANING FACILITY
- ⊕ MONITORING WELL
- ⊕ DESTROYED MONITORING WELL
- ⊕ SOIL GAS MONITORING POINT

SAMPLE ID

SGMP-3	CONCENTRATION (µg/m <sup>3</sup> )
PCE	37,000
TCE	22
cis-1,2-DCE	<7.9
trans-1,2-DCE	<7.9
VC	<5.1

CONSTITUENT

- NOTES:**
- SOIL GAS SAMPLE SGMP-3 COLLECTED ON 9/12/16.
  - PCE = TETRACHLOROETHYLENE  
TCE = TRICHLOROETHYLENE  
cis-1,2-DCE = cis-1,2-DICHLOROETHYLENE  
trans-1,2-DCE = trans-1,2-DICHLOROETHYLENE  
VC = VINYL CHLORIDE



SGMP-3	
PCE	37,000
TCE	22
cis-1,2-DCE	<7.9
trans-1,2-DCE	<7.9
VC	<5.1

<b>TITLE</b> SOIL GAS CONTAMINANT CONCENTRATION MAP	
<b>PROJECT</b> EASY WASH DRY CLEANERS DSCA ID: DC260002 5308 BRAGG BLVD. FAYETTEVILLE, CUMBERLAND COUNTY	
2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology <b>SMARTER ENVIRONMENTAL SOLUTIONS</b>	
DATE: 10-12-16	REVISION NO. 0
JOB NO: DSO-15	FIGURE NO: 2

**APPENDIX A**  
**PHOTOGRAPHS**



Photograph 1: Helium leak check performed at SGMP-3.



Photograph 2: Sample collection at SGMP-3.

**APPENDIX B**

**LABORATORY ANALYTICAL REPORT**

September 22, 2016

Jason Soban  
Hart & Hickman - Charlotte, NC  
2923 South Tryon Street, Suite 100  
Charlotte, NC 28203

Project Location: Easy Wash Cleaners - Fayetteville, NC  
Client Job Number:  
Project Number: DS0-15  
Laboratory Work Order Number: 16I0622

Enclosed are results of analyses for samples received by the laboratory on September 13, 2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Lisa A. Worthington  
Project Manager

Hart & Hickman - Charlotte, NC  
2923 South Tryon Street, Suite 100  
Charlotte, NC 28203  
ATTN: Jason Soban

REPORT DATE: 9/22/2016

PURCHASE ORDER NUMBER: LCC-005A

PROJECT NUMBER: DS0-15

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 1610622

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Easy Wash Cleaners - Fayetteville, NC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SGMP-3	1610622-01	Soil Gas		EPA TO-15	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**EPA TO-15**

**Qualifications:**

---

Elevated reporting limit due to matrix.

**Analyte & Samples(s) Qualified:**

1610622-01[SGMP-3]

---

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

**Analyte & Samples(s) Qualified:**

**Vinyl Chloride**

B158676-BS1

---

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

**Analyte & Samples(s) Qualified:**

**Vinyl Chloride**

B158676-BS1

---

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington  
Project Manager

**ANALYTICAL RESULTS**

Project Location: Easy Wash Cleaners - Fayettevill  
 Date Received: 9/13/2016  
**Field Sample #: SGMP-3**  
**Sample ID: 1610622-01**  
 Sample Matrix: Soil Gas  
 Sampled: 9/12/2016 10:45

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2105  
 Canister Size: 1 liter  
 Flow Controller ID: 4171  
 Sample Type: 5 Min

**Work Order: 1610622**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -5.9  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Sample Flags: DL-03

Analyte	ppbv			Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL		Analyzed		
cis-1,2-Dichloroethylene	ND	2.0	0.76		ND	7.9	40	9/17/16 12:21		CMR
trans-1,2-Dichloroethylene	ND	2.0	0.53		ND	7.9	40	9/17/16 12:21		CMR
Tetrachloroethylene	5400	40	11		37000	270	800	9/19/16 6:26		CMR
Trichloroethylene	4.1	2.0	0.59		22	11	40	9/17/16 12:21		CMR
Vinyl Chloride	ND	2.0	0.86		ND	5.1	40	9/17/16 12:21		CMR

Surrogates	% Recovery	% REC Limits	Date/Time
4-Bromofluorobenzene (1)	83.8	70-130	9/19/16 6:26
4-Bromofluorobenzene (1)	88.3	70-130	9/17/16 12:21

**Sample Extraction Data**

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
16I0622-01RE1 [SGMP-3]	B158676	2	200	5	1000	400	200	09/18/16

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
16I0622-01 [SGMP-3]	B158898	2	1	N/A	1000	400	20	09/16/16

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	RPD	Limit	
<b>Batch B158676 - TO-15 Prep</b>											
<b>Blank (B158676-BLK1)</b>					Prepared & Analyzed: 09/18/16						
cis-1,2-Dichloroethylene	ND	0.035									
trans-1,2-Dichloroethylene	ND	0.035									
Tetrachloroethylene	ND	0.035									
Trichloroethylene	ND	0.035									
Vinyl Chloride	ND	0.035									
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	6.47				8.00		80.9	70-130			
<b>LCS (B158676-BS1)</b>					Prepared & Analyzed: 09/18/16						
cis-1,2-Dichloroethylene	4.41				5.00		88.1	70-130			
trans-1,2-Dichloroethylene	4.61				5.00		92.3	70-130			
Tetrachloroethylene	5.37				5.00		107	70-130			
Trichloroethylene	4.25				5.00		85.0	70-130			
Vinyl Chloride	6.82				5.00		136 *	70-130			L-01, V-06
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	6.78				8.00		84.8	70-130			
<b>Duplicate (B158676-DUP1)</b>			<b>Source: 1610622-01RE1</b>			Prepared: 09/18/16 Analyzed: 09/19/16					
Tetrachloroethylene	5300	40	36000	270		5400			3.26	25	
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	7.00				8.00		87.5	70-130			
<b>Batch B158898 - TO-15 Prep</b>											
<b>Blank (B158898-BLK1)</b>					Prepared & Analyzed: 09/16/16						
cis-1,2-Dichloroethylene	ND	0.035									
trans-1,2-Dichloroethylene	ND	0.035									
Tetrachloroethylene	ND	0.035									
Trichloroethylene	ND	0.035									
Vinyl Chloride	ND	0.035									
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	6.93				8.00		86.7	70-130			

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B158898 - TO-15 Prep</b>											
<b>LCS (B158898-BS1)</b>					Prepared & Analyzed: 09/16/16						
cis-1,2-Dichloroethylene	4.20				5.00		84.0	70-130			
trans-1,2-Dichloroethylene	4.23				5.00		84.7	70-130			
Tetrachloroethylene	5.18				5.00		104	70-130			
Trichloroethylene	4.80				5.00		96.1	70-130			
Vinyl Chloride	4.71				5.00		94.2	70-130			
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	7.18				8.00		89.8	70-130			
<b>Duplicate (B158898-DUP1)</b>					Source: 1610622-01		Prepared: 09/16/16 Analyzed: 09/17/16				
cis-1,2-Dichloroethylene	ND	2.0	ND	7.9		ND					25
trans-1,2-Dichloroethylene	ND	2.0	ND	7.9		ND					25
Trichloroethylene	4.1	2.0	22	11		4.1		0.976			25
Vinyl Chloride	ND	2.0	ND	5.1		ND					25
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	7.09				8.00		88.6	70-130			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
DL-03	Elevated reporting limit due to matrix.
L-01	Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
cis-1,2-Dichloroethylene	AIHA,FL,NY,VA
trans-1,2-Dichloroethylene	AIHA,NJ,NY,VA
Tetrachloroethylene	AIHA,FL,NJ,NY,VA
Trichloroethylene	AIHA,FL,NJ,NY,VA
Vinyl Chloride	AIHA,FL,NJ,NY,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2017
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2017
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2017
RI	Rhode Island Department of Health	LAO00112	12/30/2016
NC	North Carolina Div. of Water Quality	652	12/31/2016
NJ	New Jersey DEP	MA007 NELAP	06/30/2017
FL	Florida Department of Health	E871027 NELAP	06/30/2017
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2017
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2016
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017



1610622  
 Phone: 413-525-2332  
 Fax: 413-525-6405  
 Email: info@contestlabs.com

http://www.contestlabs.com

Doc #378 Rev 0 5/8/15

CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street  
 East Longmeadow, MA 01028

Page 1 of 1

Company Name: Hart & Hickman, P.C.  
 Address: 3334 Hillsborough Street  
 Phone: 704-586-0077  
 Project Name: Easy Wash Cleaners  
 Project Location: Fayetteville, NC  
 Project Number: DSCA-15  
 Project Manager: Jason Soban  
 Con-Test Bid:  
 Invoice Recipient: Accounts Payable  
 Sampled By: Patrick Stearns

Requested Turnaround Time	
7-Day <input type="checkbox"/>	10-Day <input type="checkbox"/>
Other: <u>Hrt Standard</u>	
Rush-Approval Required	
1-Day <input type="checkbox"/>	3-Day <input type="checkbox"/>
2-Day <input type="checkbox"/>	4-Day <input type="checkbox"/>
Data Delivery	
Format: PDF <input type="checkbox"/>	EXCEL <input checked="" type="checkbox"/>
Other:	
Enhanced Data Package Required: <input type="checkbox"/>	
Email To: <u>jsoban@horthickman.com</u>	
Fax To #:	

ANALYSIS REQUESTED

TO-15 (PCE, TCE, cis, trans, VC, VC2)	Initial Pressure	Final Pressure	Lab Receipt Pressure	" Hg	Please fill out completely, sign, date and retain the yellow copy for your records
				Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply	
				For summa canister and flow controller information please refer to Con-Test's Air Media Agreement	
				Summa Can ID	Flow Controller ID
				304	592125 4171

Lab Use	Client Use	Collection Data		Duration	Flow Rate		Matrix	Volume
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	<input type="checkbox"/> m <sup>3</sup> /min	<input type="checkbox"/> L/min	Code	<input type="checkbox"/> Liters m <sup>3</sup>
01	SGmp-3	9/12/16 1040	9/12/16 1045	5			SG	

Comments: Analyze DSCA-15 only!

Please use the following codes to indicate possible sample concentration within the Conc Code column above:  
 H - High; M - Medium; L - Low; C - Clean; U - Unknown

**Matrix Codes:**  
 SG = SOIL GAS  
 IA = INDOOR AIR  
 AMB = AMBIENT  
 SS = SUB SLAB  
 D = DUP  
 BL = BLANK  
 O = Other \_\_\_\_\_

Relinquished by: (signature) <u>Patrick Stearns</u>	Date/Time: 9/13/16 1200	Detection Limit Requirements MA	Special Requirements
Received by: (signature) <u>Paul Kornis</u>	Date/Time: 9/13/16 1200		<input type="checkbox"/> MA MCP Required
Relinquished by: (signature) <u>Paul Kornis</u>	Date/Time: 9/13/16 1700	CT	<input type="checkbox"/> CT RCP Required
Received by: (signature) <u>Paul Kornis</u>	Date/Time: 9-15-16 13:22	Other:	<input type="checkbox"/> Enhanced Data Package Required

NELAC and AIHA-LAP, LLC Accredited

Relinquished by: (signature) Date/Time: TURNAROUND TIME (BUSINESS DAYS) STARTS AT 9:00 AM THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON THIS CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME CANNOT START UNTIL ALL QUESTIONS HAVE BEEN ANSWERED.

Received by: (signature) Date/Time:

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT



39 Spruce St.  
East Longmeadow, MA.  
01028  
P: 413-525-2332  
F: 413-525-6405

**AIR Only Receipt Checklist**

CLIENT NAME Hart & Hickman RECEIVED BY: PB DATE: 9.15.16

- 1) Was the chain(s) of custody relinquished and signed? Yes  No
- 2) Does the chain agree with the samples? Yes  No   
If not, explain:
- 3) Are all the samples in good condition? Yes  No   
If not, explain:
- 4) Are there any samples "On Hold"? Yes  No  Stored where:
- 5) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Location where samples are stored:  Permission to subcontract samples? Yes  No   
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

7) Number of cans Individually Certified or Batch Certified? \_\_\_\_\_

Containers received at Con-Test		
	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)	1	1 Gt
Tedlar Bags		
TO-17 Tubes		
Regulators	1	5 min
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs		
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

Unused Regulators:  
Savage lock nut/ferrule X1

- 1) Was all media (used & unused) checked into the WASP?
- 2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:				2105	4771								

**Login Sample Receipt Checklist**  
**(Rejection Criteria Listing - Using Sample Acceptance Policy)**  
**Any False statement will be brought to the attention of Client**

Question	Answer (True/False)		Comment
	T/F/NA		
1) The coolers'/boxes' custody seal, if present, is intact.	NA		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	NA		
4) Cooler Temperature is acceptable.	NA		
5) Cooler Temperature is recorded.	NA		
6) COC is filled out in ink and legible.	T		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	T		
9) Samples are received within Holding Time.	T		
10) Sample containers have legible labels.	T		
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T		
12) Sample collection date/times are provided.	T		
13) Appropriate sample/media containers are used.	T		
14) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
15) Trip blanks provided if applicable.	NA		

Who notified of False statements?

Log-In Technician Initials: PB

Date/Time:

Date/Time: 9-15-16  
13:22

**APPENDIX C**

**DSCA SOIL GAS RISK CALCULATORS**

**DSCA Soil Gas Risk Calculator - Cumulative Risk for Resident**

Version 5, September 2016

**DSCA ID No:** 260002  
**Name/Address of DSCA Site:** Easy Wash Dry Cleaners, 5308 Bragg Boulevard, Fayetteville, NC  
**Name/Address of Sampling Location:** A Cut Above - hair salon (Former Blanton's Wash Center and Self-Service Laundry), 5304 Bragg Boulevard, Fayetteville, NC  
**Sampling Date:** 9/12/2016  
**Sample ID:** SGMP-3

All concentrations are in ug/m<sup>3</sup>

CAS #	Chemical Name:	Soil Gas Concentration (ug/m <sup>3</sup> )	Calculated Indoor Air Concentration (ug/m <sup>3</sup> )	Indoor Air Screening Level for Carcinogens @ TCR = 1E-06	Indoor Air Screening Level for Non-Carcinogens @ THQ = 0.2	Calculated Carcinogenic Risk	Calculated Non-Carcinogenic Hazard Quotient
127-18-4	Tetrachloroethylene	37000	1110	1.08E+01	8.34E+00	1.0E-04	2.7E+01
79-01-6	Trichloroethylene	22	0.66	4.78E-01	4.17E-01	1.4E-06	3.2E-01
<b>Cumulative:</b>						1.0E-04	2.7E+01

**DSCA Soil Gas Risk Calculator - Cumulative Risk for Non-Residential Worker**

Version 5, September 2016

**DSCA ID No:** 260002  
**Name/Address of DSCA Site:** Easy Wash Dry Cleaners, 5308 Bragg Boulevard, Fayetteville, NC  
**Name/Address of Sampling Location:** A Cut Above - hair salon (Former Blanton's Wash Center and Self-Service Laundry), 5304 Bragg Boulevard, Fayetteville, NC  
**Sampling Date:** 9/12/2016  
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All concentrations are in ug/m<sup>3</sup>

CAS #	Chemical Name:	Soil Gas Concentration (ug/m <sup>3</sup> )	Calculated Indoor Air Concentration (ug/m <sup>3</sup> )	Indoor Air Screening Level for Carcinogens @ TCR = 1E-06	Indoor Air Screening Level for Non-Carcinogens @ THQ = 0.2	Calculated Carcinogenic Risk	Calculated Non-Carcinogenic Hazard Quotient
127-18-4	Tetrachloroethylene	37000	370	4.72E+01	3.50E+01	7.8E-06	2.1E+00
79-01-6	Trichloroethylene	22	0.22	2.99E+00	1.75E+00	7.4E-08	2.5E-02
<b>Cumulative:</b>						7.9E-06	2.1E+00