MACTEC

engineering and constructing a better tomorrow

April 6, 2017

Division of Environmental Remediation
Remedial Bureau E, 12th Floor
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7016

Attention: Mr. Michael Mason, Project Manager

Subject: **February 2017 Soil Vapor Intrusion Evaluation Report**
Hidden Valley Electronics Remedial Investigation – Site Number 704029
MACTEC Engineering and Consulting, P.C. Project No. 3612122247

Dear Mr. Mason:

MACTEC Engineering and Consulting, P.C., (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment No. D007619-15) is pleased to present this report documenting the February 2017 soil vapor intrusion (SVI) activities and findings associated with the Hidden Valley Electronics site (Site), NYSDEC Site number 704029. The Site is currently listed by the NYSDEC as a Class 2 site which is defined as a significant threat to the public health or environment.

This SVI evaluation report presents the results of sampling conducted in February 2017 at residential structures. The SVI sampling was accomplished as discussed in the Site Field Activities Plan (MACTEC, 2016). SVI sampling consisted of collecting sub-slab soil vapor, basement air, and outdoor ambient air samples, as well as completing a product inventory and a building questionnaire.

BACKGROUND

The Site is located in the Town of Vestal, Broome County, New York (Figure 1). The Site property was used as a small electronics manufacturer from the late 1950's to the mid 1990's. During that time the use of solvents, including the chlorinated solvents 1,1,1-trichloroethane and trichloroethene, was included in the cleaning process. Solvents and their breakdown products have been detected in groundwater at and downgradient of the Site, including groundwater located in the Twin Orchards neighborhood of Vestal.

Volatile organic compounds (VOCs), including chlorinated solvents, can partition from groundwater to soil vapor and then migrate through the soil column. Soil vapor can then be drawn into buildings through seams and cracks in foundations and floor slabs. The purpose of the SVI sampling is to continue to monitor three homes to determine if the VOCs detected in groundwater are partitioning from groundwater to soil vapor and potentially to indoor air (i.e., evaluate the soil vapor intrusion pathway).

FEBRUARY 2017 SOIL VAPOR INTRUSION SAMPLING

The February 2017 SVI sampling was conducted near the Site to evaluate potential for soil vapor intrusion to nearby structures. MACTEC sampled three residential structures (309 Maple Street, 1908 Old Vestal Road, and 1912 Old Vestal Road). Sampling included the collection of three basement indoor air samples, four sub-slab soil vapor samples of which one was a duplicate sample, and one exterior ambient air sample. The ambient air sample was collected outside the residence at 309 Maple Street.

Vapor samples were collected from below the concrete slab at each structure. A permanent sample point in each location was located and sampled. A ¼-inch diameter piece of Teflon tubing was inserted in to the 3/8-inch permanent sample port tubing and secured with zip ties. One 60 cubic centimeter volume of air was purged from the tubing with a polyethylene syringe. The syringe was capped and the air released outside the building so as to not interfere with the indoor air sample collection. A 6-liter SUMMA®-type canister with a 24-hour flow valve was connected to the tubing

with a 9/16-inch Swagelok fitting, and the sample was collected. Upon completion of the sub slab sampling, the permanent sample port tubing was curled up and secured within the sample vault.

Indoor air samples were collected over the same 24-hour interval in 6-liter SUMMA®-type canisters from the vicinity of the sub-slab vapor sample collection points. The outdoor ambient air sample was collected over approximately the same 24-hour interval in 6-liter SUMMA®-type canisters outside of the residence at 309 Maple Street.

The soil vapor, indoor air, and ambient air samples were shipped to TestAmerica in Knoxville, Tennessee for analysis of VOCs by United States Environmental Protection Agency Method TO-15.

Table 1 presents Structure IDs for the locations sampled, including physical addresses and sample IDs. SVI sample results obtained for each structure are presented in Table 2. Indoor Air Sampling Records, Structure Sampling Questionnaire and Building Inventories, and Photographic Logs are provided in Attachment 1. The Data Usability Summary Report and laboratory analytical sheets are provided in Attachment 2.

If you have questions or concerns, please feel free to contact us at 207-775-5401.

Sincerely,

MACTEC Engineering and Consulting, P.C.

Thomas D. Longley
Senior Geologist

Mark Stelmack, P.E.
Project Manager

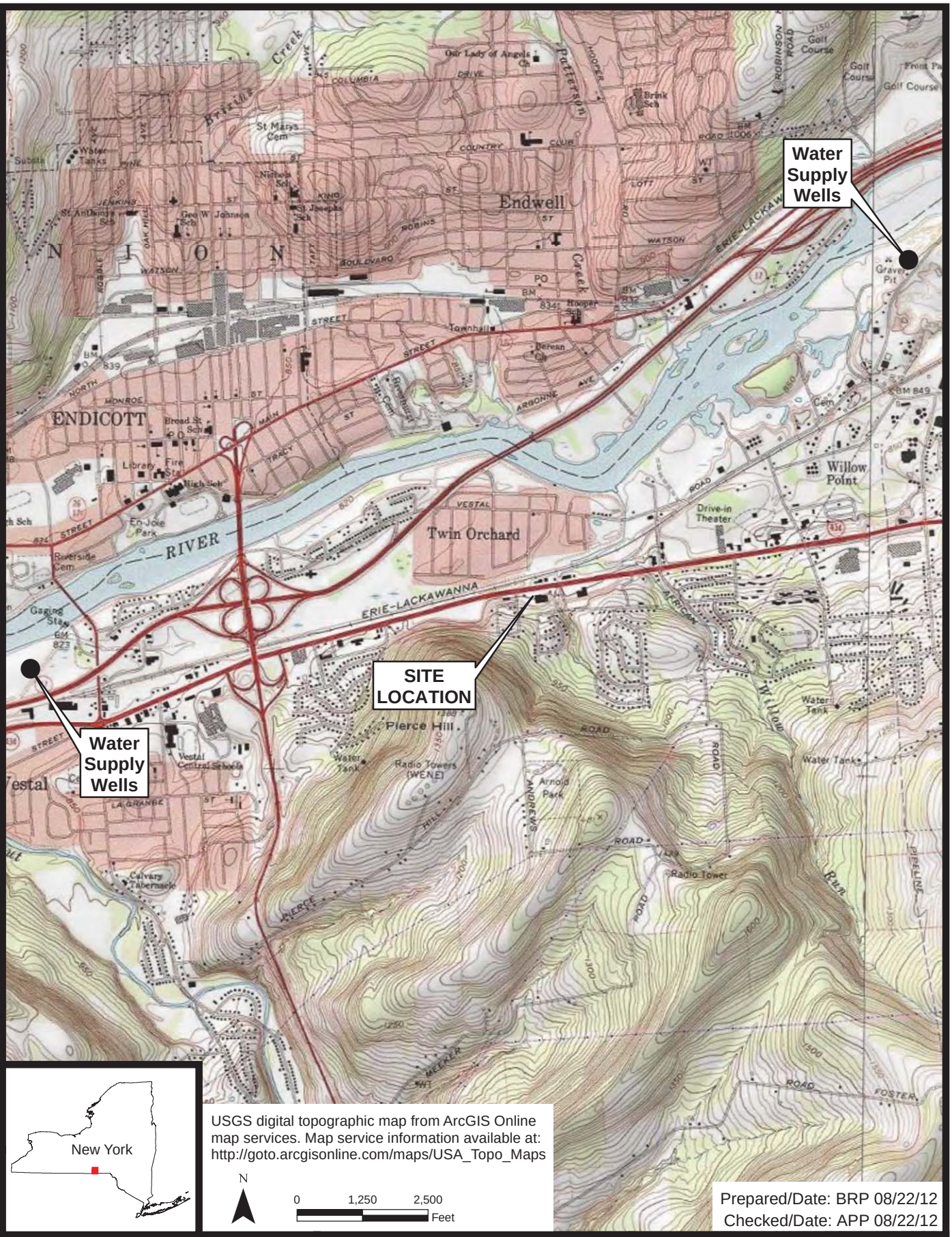
Enclosures (2)

Attachment 1: February 2017 Indoor Air Sampling Records, Structure Sampling Questionnaire and Building Inventories, and Photographic Logs

Attachment 2: Data Usability Summary Reports and Laboratory Analytical Results

REFERENCES

MACTEC Engineering and Consulting, P.C., 2016. Field Activities Plan: January 2017 Indoor Air Sampling. Prepared for New York State Department of Environmental Conservation, Albany, New York. December 2016.



USGS digital topographic map from ArcGIS Online map services. Map service information available at: http://goto.arcgisonline.com/maps/USA_Topo_Maps

Prepared/Date: BRP 08/22/12
Checked/Date: APP 08/22/12

HIDDEN VALLEY ELECTRONICS SITE

VESTAL, NEW YORK

MACTEC

SITE LOCATION
1808 VESTAL PARKWAY EAST
Project 3612122247 Figure 1

Table 1: Sample Identification and Analyses

Site Type	Media	Site ID	Location ID	Sample ID	DUP	VOCs TO15
Residential Sub-slab/Indoor Air						
Residence	Sub-slab	1912 Old Vestal Road	SV-VR-008	HVSVVR008X05XX		1
Residence	Sub-slab	1912 Old Vestal Road	SV-VR-008	HVSVVR008X05XD	1	1
Residence	Basement indoor air	1912 Old Vestal Road	BA-VR-008	HVIAVR008X05XX		1
Residence	Sub-slab	1908 Old Vestal Road	SV-VR-010	HVSVVR010X05XX		1
Residence	Basement indoor air	1908 Old Vestal Road	BA-VR-010	HVIAVR010X05XX		1
Residence	Sub-slab	309 Maple Street	SV-MA-002	HVSVMA002X04XX		1
Residence	Basement indoor air	309 Maple Street	BA-MA-002	HVIAMA002X04XX		1
	Outdoor Ambient Air		AA-VR-001	HVAAVR001X02XX		1
TOTAL SAMPLES					1	8

Notes:
Sample ID = 14-digit unique sample identifier.
DUP = Duplicate sample collected.
Volatile organic compounds (VOCs) by USEPA Method TO-15.
Location ID: AA = Ambient Air; BA = Basement Air; SV = Soil Vapor
MA = Maple Street; VR = Vestar Road

Table 2: Sub-Slab and Indoor Air Detected VOC Results - February 2017

Address	Outdoor Ambient Air		309 Maple Street		309 Maple Street		1908 Old Vestal Road		1908 Old Vestal Road		1912 Old Vestal Road		1912 Old Vestal Road		1912 Old Vestal Road	
Location	AA-VR-001		BA-MA-002		SV-MA-002		BA-VR-010		SV-VR-010		BA-VR-008		SV-VR-008		SV-VR-008	
Sample Date	2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017		2/8/2017	
Sample ID	HVAAVR001X02XX		HVIAMA002X04XX		HVSVMA002X04XX		HVIAVR010X05XX		HVSVVR010X05XX		HVIAVR008X05XX		HVSVVR008X05XD		HVSVVR008X05XX	
Qc Code	FS		FS		FS		FS		FS		FS		FD		FS	
Parameter	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane	0.44	U	**0.56**		**47**		0.44	U	**67**		**0.45**		**65**		**67**	
1,1,2-Trichloro-1,2,2-Trifluoroethane	**0.62**		**0.61**		**0.99**		**0.66**		**2.1**		**0.61**		**1.6**		**1.6**	
1,1-Dichloroethane	0.32	U	0.32	U	**0.45**		0.32	U	**0.62**		0.32	U	0.32	U	0.32	U
1,2,4-Trimethylbenzene	0.39	U	**0.72**		0.39	U	0.39	U	0.39	U	0.39	U	0.39	U	0.39	U
1,2-Dichloroethane	0.32	U	0.32	U	0.32	U	**1.1**		0.32	U	0.32	U	0.32	U	0.32	U
1,4-Dioxane	0.72	U	0.72	U	0.72	U	**1.4**		0.72	U	0.72	U	0.72	U	0.72	U
2-Butanone	**1**		**2.2**		**0.96**		**2.2**		0.94	U	**1.2**		**3.5**	J	**1.2**	J
4-Methyl-2-pentanone	0.82	U	0.82	U	0.82	U	0.82	U	**1.5**		0.82	U	**0.89**		0.82	U
Benzene	**0.97**		**1.1**		**0.41**		**1.1**		0.26	U	**0.84**		0.26	U	0.26	U
Carbon tetrachloride	**0.55**		**0.57**		**0.31**		**0.61**		**1.1**		**0.47**		0.25	U	0.25	U
Chloroform	0.39	U	0.39	U	0.39	U	**1**		**11**		0.39	U	**3.8**		**3.8**	
Chloromethane	**1.2**		**1.6**		0.41	U	**1.7**		0.41	U	**1.1**		0.41	UJ	**0.47**	J
Cyclohexane	0.69	U	**0.79**		0.69	U	0.69	U	0.69	U	0.69	U	0.69	U	0.69	U
Dichlorodifluoromethane	**1.3**		**1.1**		**1.2**		**1.2**		**1.1**		**1.1**		**1.1**		**1.1**	
Ethanol	**7.2**		**580**		**40**		**150**		**6.7**		**56**		**7.4**	J	3.8	UJ
Ethylbenzene	0.35	U	**0.6**		0.35	U	**0.35**		0.35	U	0.35	U	0.35	U	0.35	U
Hexane	**0.85**		**1.2**		**2.4**		**0.81**		0.7	U	**0.76**		0.7	U	0.7	U
Methylene chloride	**0.89**		**1.9**		**11**		**2**		**1.1**		**0.78**		**1**	J	0.69	UJ
Tetrachloroethene	0.54	U	**0.79**		0.54	U	0.54	U	0.54	U	0.54	U	**0.8**		**0.71**	
Toluene	**2.1**		**10**		**2.1**		**3.3**		**0.83**		**1.8**		0.45	U	0.45	U
Trichloroethene	0.21	U	**0.71**		**52**		**0.27**		**100**		**0.55**		**42**		**42**	
Trichlorofluoromethane	**1.7**	J	**1.7**	J	**3.9**	J	**1.8**	J	**4.5**	J	**1.6**	J	**3.5**	J	**3.5**	J
Xylene, o	**0.38**		**0.61**		0.35	U	**0.39**		0.35	U	0.35	U	0.35	U	0.35	U
Xylenes (m&p)	**1.1**		**2**		**0.66**		**1.1**		**0.5**		**0.8**		0.35	U	0.35	U

Notes:
Samples analyzed for VOCs by USEPA Method TO-15.
Only detected compounds are reported.
Location Name: AA = Ambient Air; SV = Soil Vapor; BA = Basement Air;
Results in microgram per cubic meter ($\mu g/m^3$)
QC Code:
FS = Field Sample
FD = Field Duplicate
Qualifiers:
U = Not detected at a concentration greater than the RL
J = Estimated value
Detected compounds are indicated in BOLD

ATTACHMENT 1

FEBRUARY 2017 INDOOR AIR SAMPLING RECORDS, STRUCTURE SAMPLING QUESTIONNAIRE AND BUILDING INVENTORIES, AND PHOTOGRAPHIC LOGS

INDOOR AIR SAMPLING RECORD

PROJECT NAME: HIDDEN VALLEY ELECTRONICS | LOCATION ID: 309 MAPLE | DATE: 2-7-17

PROJECT NO./TASK NO.: 3612122247.03 | CLIENT: NYSDEC

PROJECT LOCATION: VESTAL, NY | SAMPLER NAME: LAUREN TIERNEY, JULIE PALLOZZI

WEATHER CONDITIONS ~~(AM)~~ START: OVERCAST, FREEZING RAIN | SAMPLER SIGNATURE: JP

WEATHER CONDITIONS ~~(PM)~~ END: OVERCAST, 44°F | CHECKED BY: Lauren Tierney | DATE: 2.8.17

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		FIRST FLOOR AIR SAMPLE		AMBIENT AIR SAMPLE	
Flow Regulator Number:	09948	Flow Regulator Number:	10645	Flow Regulator Number:		Flow Regulator Number:	09716
Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):		Flow Rate (mL/min):	24 HR
Canister Serial Number:	10544	Canister Serial Number:	10038	Canister Serial Number:		Canister Serial Number:	10236
Start Date/Time	2-7-17 0838	Start Date/Time	2-7-17 0837	Start Date/Time		Start Date/Time	2-7-17 0844
Start Pressure ("Hg):	-28.5	Start Pressure ("Hg):	-30	Start Pressure ("Hg):		Start Pressure ("Hg):	-30
Stop Date/Time	2-8-17 0804	Stop Date/Time	2-8-17 0804	Stop Date/Time		Stop Date/Time	2-8-17 0815
Stop Pressure ("Hg):	-7	Stop Pressure ("Hg):	-4	Stop Pressure ("Hg):		Stop Pressure ("Hg):	-1
Sample ID:	HVSVMA002X04XX	Sample ID:	HVIAMA002X04XX	Sample ID:	JP	Sample ID:	HVAAVR001X02XX

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished	UNFINISHED	Story/Level:	BASEMENT	Story/Level:		Direction from Building	NW CORNER
Floor Slab Thickness:	~4"	Room:	BASEMENT	Room:		Distance from Building:	~9'
Potential Vapor Entry Points:	CRACKS UTILITY	Potential Vapor Entry Points:	CRACKS UTILITY	Potential Vapor Entry Points:		Distance from Roadway:	~100'
Floor Surface:	CONCRETE	Floor Surface:	CONCRETE	Floor Surface:		Ground Surface:	CONCRETE
Noticable Odor:	NONE	Noticable Odor:	No	Noticable Odor:		Noticable Odor:	NO
PID Reading ~~(ppb)~~ ppm	0.1	PID Reading ~~(ppb)~~ ppm	0.0	PID Reading (ppb):		PID Reading ~~(ppb)~~ ppm	0.0
Intake Depth/Height:	~5"	Intake Height:	~4'	Intake Height:		Intake Height above Ground Surface:	~5'
Helium Test Conducted? Breakthrough %:		Indoor Air Temp	~60°F	Indoor Air Temp		Intake tubing?	NONE

Comments/Location Sketch:

PID BACKGROUND: 0.0 ppm
HEADSPACE: 0.0 ppm

MACTEC
511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: MATTIOLE RESIDENCE

Address: 309 MAPLE STREET Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: Broome

Contact Information

Preparer's Name: JULIE PALLOZZI Phone No: 207-775-5401

Preparer's Affiliation: AMEC FOSTER WHEELER Company Code:

Purpose of Investigation: SOIL VAPOR INTRUSTION Date of Inspection: 2-7-17

Contact Name: JOHN MATTIOLE Affiliation: OWNER

Phone No: 607-786-0861 Alt. Phone No: 607-723-0839 Email:

Number of Occupants (total): 1 Number of Children: 0

☒ Occupant Interviewed? ☒ Owner Occupied? ☒ Owner Interviewed?

Owner Name (if different): N/A Owner Phone: N/A

Owner Mailing Address: N/A

Building Details

Bldg Type (Res/Com/Ind/Mixed): RESIDENTIAL Bldg Size (S/M/L): S

If Commercial or Industrial Facility, Select Operations:

If Residential Select Structure Type: SINGLE FAMILY RES

Number of Floors: 1 floor plus attic Approx. Year Construction: 1930's ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Average tightness

Foundation Description

Foundation Type: concrete basement Foundation Depth (bgs): ~7 Unit: FEET

Foundation Floor Material: poured concrete Foundation Floor Thickness: ~4

Foundation Wall Material: poured concrete Foundation Wall Thickness: UNK Unit: INCHES

☒ Floor penetrations? Describe Floor Penetrations: drain (dry well), sewer, water

☒ Wall penetrations? Describe Wall Penetrations: UTILITY

Basement is: dry Basement is: unfinished ☐ Sumps/Drains? Water In Sump?: N A

Describe Foundation Condition (cracks, seepage, etc.) : SOME CRACKS (SMALL)

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating/Cooling/Ventilation Systems

Heating System: hot-air circulation; woodstove Heat Fuel Type: Natural Gas ☐ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: Gas Clothes Dryer Fuel Type: —

Water Htr Vent Location: — Dryer Vent Location: —

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: MATTIOLE RESIDENCE Bldg Code: Date: 2-7-17

Bldg Address: 309 MAPLE STREET Apt/Suite No: N/A

Bldg City/State/Zip: VESTAL NY, 13850

Make and Model of PID: ~~PPb RAE Plus~~ miniRAE Date of Calibration: 2-7-17

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
BASEMENT	TURTLE WAX	23	U		< 0 ppm	☐
	ARMORALL AIR FRESH	16	U			☐
	ARMORALL GLASS CLEANER	16	U			☐
	SMART + SIMPLE LEMON AMMONIA	64	U			☐
	BLEACH	96	U			☐
	WD-40	16	U		6	☐
	GORILLA GLUE	16	U		1	☐
	KRYLON ACRYLIC LATEX ENAMEL	40	U		7	☐
	QUIKRETE HIGH GLOSS SEALER	1 gal	U		1	☐
	TUNGSEAL WOOD STAIN	1¼quart	U		1	☐
	MINWAX POLYURETHANE	64	U		6	☐
	BEHR PREMIUM PLUS	303	U		7	☐
	COLOR PLACE SEMI-GLOSS	23	U		7	☐
	VALSPAR LATEX SATIN	124	U		6	☐
	COLEMAN CAMP FUEL	1 gal	U		6	☐
	FUEL CONTAINER	5 gal	U		2	☐

HISTORIC READINGS FROM 2015 PPb

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Y Were there any elevated PID readings taken on site? N ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: MATTIOLE RESIDENCE

Address: 309 MAPLE STREET Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County:

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: occasionally Floor Material: Painted cement

☐ Inhabited? ☐ HVAC System On? ☐ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener: N/A

☐ Cleaning Products Used Recently?: Description of Cleaning Products:

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☐ Solvent or Chemical Odors? Describe Odors (if any):

☐ Do Any Occupants Use Solvents At Work? If So, List Solvents Used:

☐ Recent Pesticide/Rodenticide? Description of Last Use:

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

None

☐ Any Prior Testing For Radon? If So, When?:

☒ Any Prior Testing For VOCs? If So, When?: 3/11/2015

Sampling Conditions

Weather Conditions: RAIN, OVERCAST Outdoor Temperature: 33 °F

Current Building Use: RES. Barometric Pressure: 29.88 in(hg)

Product Inventory Complete? Y ☒ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: _____ Address: 309 MAPLE STREET N/A VESTAL, NY 13850

Sampling Information

SEE MACTEC FDR

Sampler Name(s): _____ Sampler Company Code: _____

Sample Collection Date: _____ Date Samples Sent To Lab: _____

Sample Chain of Custody Number: _____ Outdoor Air Sample Location ID: _____

SUMMA Canister Information

Sample ID:					
Location Code:					
Location Type:					
Canister ID:					
Regulator ID:					
Matrix:					
Sampling Method:					

Sampling Area Info

Slab Thickness (inches):					
Sub-Slab Material:					
Sub-Slab Moisture:					
Seal Type:					
Seal Adequate?:	☐	☐	☐	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:					
Vacuum Gauge Start:					
Sample End Date/Time:					
Vacuum Gauge End:					
Sample Duration (hrs):					
Vacuum Gauge Unit:					

Sample QA/QC Readings

Vapor Port Purge:	☐	☐	☐	☐	☐
Purge PID Reading:					
Purge PID Unit:					
Tracer Test Pass:	☐	☐	☐	☐	☐

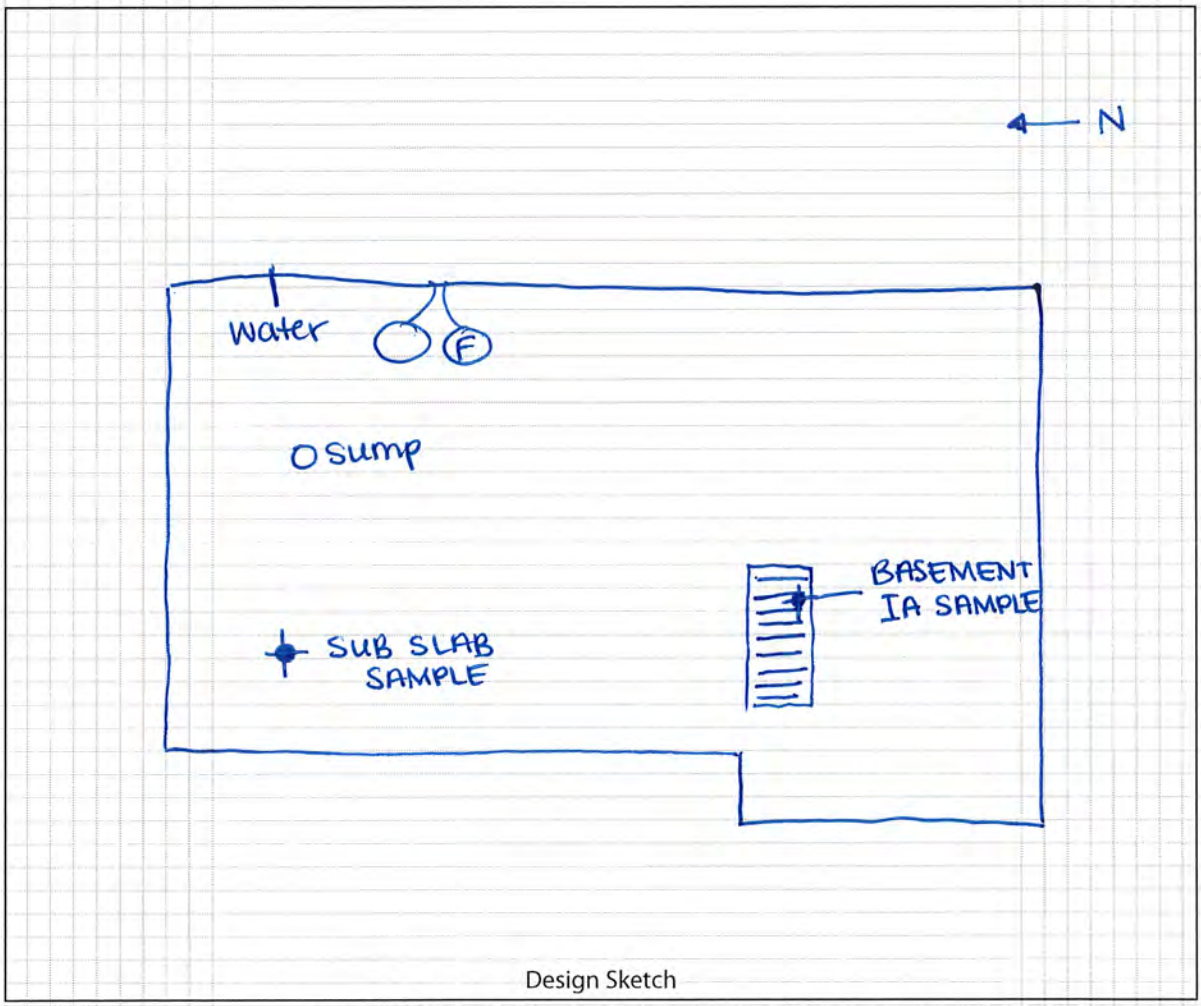
Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level .
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

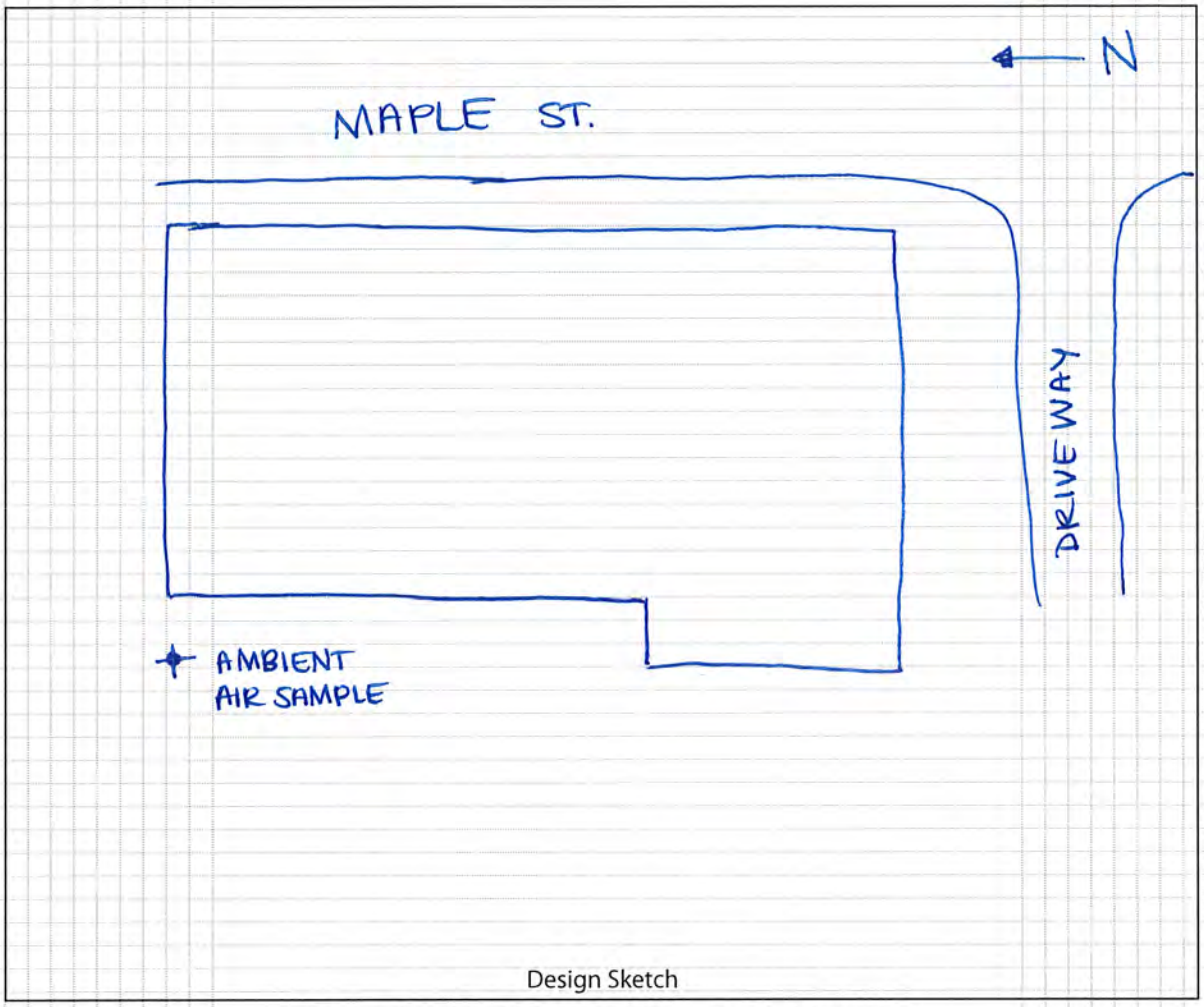
B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	xxxxxxx	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	######	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

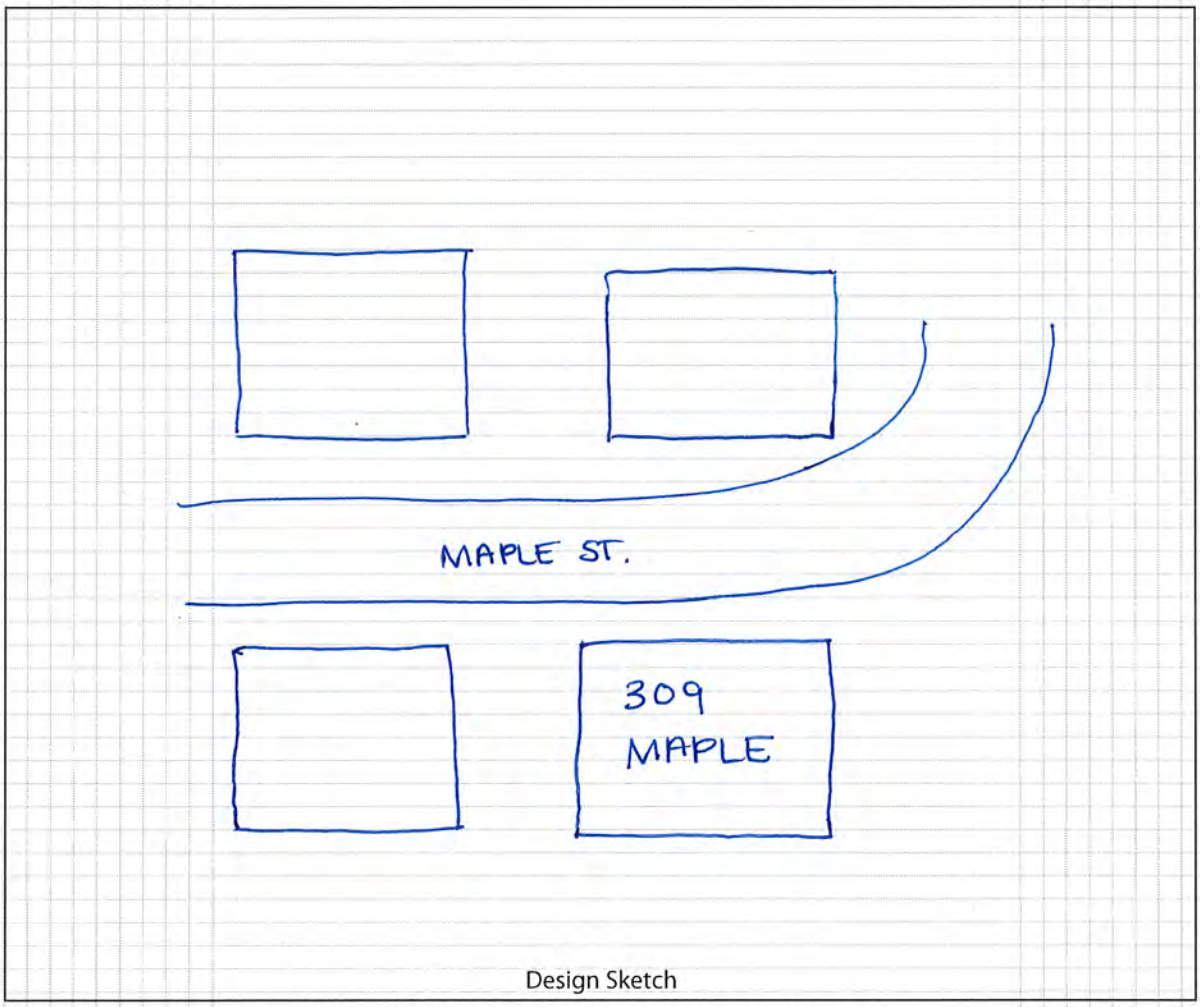
B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 1

Location:
309 Maple St

Description:
Sample location:
SV-MA-002
SampleID:
HVSVMA002X04XX

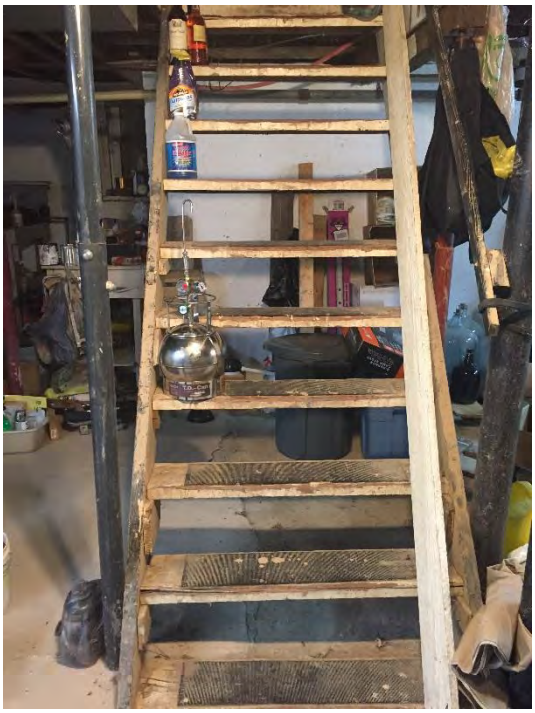
Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 2

Location:
309 Maple St

Description:
Sample Location:
BA-MA-002
Sample ID:
HVIAMA002X04XX



Attachment 1 – March 2015 SVI - Photographic Log

Client: NYSDEC ***Project Number:*** **3612122247.03.******

Site Name: Hidden Valley Electronics ***Site Location:*** Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 3

Location:
309 Maple St

Description:
Sample location:
AA-VR-001
SampleID:
HVAAVR001X02XX

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 4

Location:
309 Maple St

Description:
Basement products on basement stairs

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 5

Location:
309 Maple St

Description:
Basement products

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 6

Location:
309 Maple St

Description:
Basement shelves

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

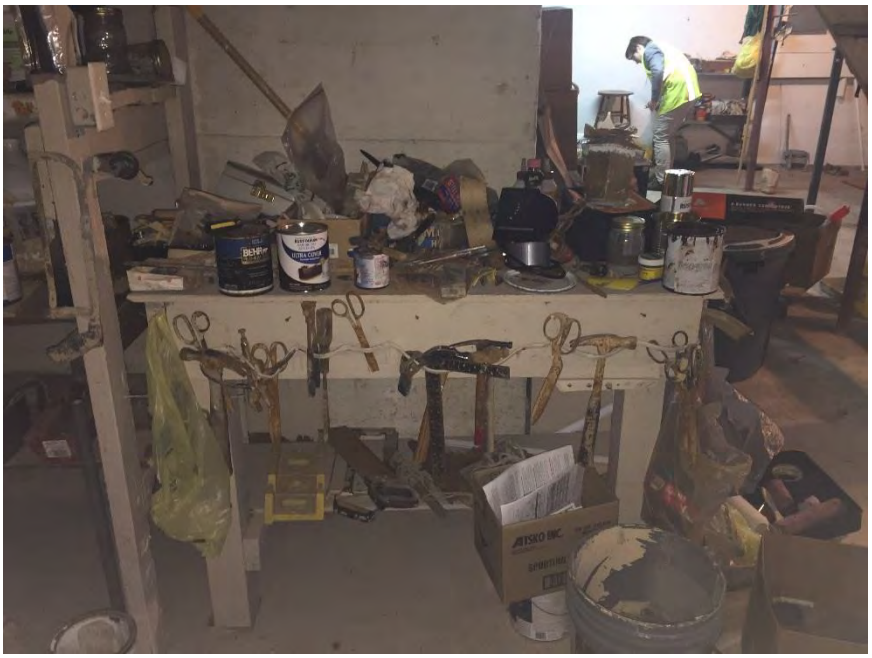
Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 7

Location:
309 Maple St

Description:
Basement work bench



Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 8

Location:
309 Maple St

Description:
Basement shelves

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 9

Location:
309 Maple St

Description:
Basement floor drain

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 10

Location:
309 Maple St

Description:
Basement floor cracks

INDOOR AIR SAMPLING RECORD

PROJECT NAME: HIDDEN VALLEY ELECTRONICS
LOCATION ID: 1908 OLD VESTAL DATE: 2-7-17
PROJECT NO./TASK NO.: 3612122247.03
CLIENT: NYSDEC
PROJECT LOCATION: VESTAL, NY
SAMPLER NAME: LAUREN TIERNEY, JULIE PALLOZZI
WEATHER CONDITIONS ~~(AM)~~ START: FREEZING RAIN, 33°F
SAMPLER SIGNATURE: JP
WEATHER CONDITIONS ~~(PM)~~ END: OVERCAST, 44°F
CHECKED BY: Lauren Tierney DATE: 2-8-17

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		FIRST FLOOR AIR SAMPLE		AMBIENT AIR SAMPLE	
Flow Regulator Number:	09905	Flow Regulator Number:	09867	Flow Regulator Number:		Flow Regulator Number:	
Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial Number:	10821	Canister Serial Number:	10827	Canister Serial Number:		Canister Serial Number:	
Start Date/Time	2-7-17 1009	Start Date/Time	2-7-17 1009	Start Date/Time		Start Date/Time	
Start Pressure ("Hg):	-30	Start Pressure ("Hg):	-29	Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time	2-8-17 0942	Stop Date/Time	2-8-17 0941	Stop Date/Time		Stop Date/Time	
Stop Pressure ("Hg):	-5	Stop Pressure ("Hg):	-4.5	Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID:	HVSVVR010X05XX	Sample ID:	HVIAVR010X05XX	Sample ID:	(JP)	Sample ID:	AA SAMPLE INFO ON 309 MAPLE FDR

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished	UNFINISH	Story/Level:	BASEMENT	Story/Level:		Direction from Building	
Floor Slab Thickness:	~4"	Room:	" "	Room:		Distance from Building:	
Potential Vapor Entry Points:	FLOOR DRAIN	Potential Vapor Entry Points:	FLOOR DRAIN	Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	CONCRETE	Floor Surface:	CONCRETE	Floor Surface:		Ground Surface:	
Noticable Odor:	NO	Noticable Odor:	AIR FRESH.	Noticable Odor:		Noticable Odor:	
PID Reading ~~(ppb)~~ ppm:	0.0	PID Reading ~~(ppb)~~ ppm:	0.0	PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	~5"	Intake Height:	~5'	Intake Height:		Intake Height above Ground Surface:	
Helium Test Conducted? Breakthrough %:		Indoor Air Temp	~60°F	Indoor Air Temp		Intake tubing?	

Comments/Location Sketch:

PID HEADSPACE: 0.0 ppm
- WATER INSIDE SAMPLE PORT - HEADSPACE
- WATER DOES NOT APPEAR TO BE INSIDE PORT TUBING

MACTEC
511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: CLARK RESIDENCE

Address: 1908 VESTAL ROAD Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: Broome

Contact Information

Preparer's Name: LAUREN TIERNEY Phone No: (207) 775-5401

Preparer's Affiliation: AMEC FOSTER WHEELER Company Code:

Purpose of Investigation: SOIL VAPOR INSTRUSION Date of Inspection: 2-7-17

Contact Name: SANDRA & DAVID CLARK Affiliation: OWNER

Phone No: (607) 321-3231 Alt. Phone No: Email:

Number of Occupants (total): 2 Number of Children:

☒ Occupant Interviewed? ☒ Owner Occupied? ☒ Owner Interviewed?

Owner Name (if different): N/A Owner Phone: N/A

Owner Mailing Address: N/A

Building Details

Bldg Type (Res/Com/Ind/Mixed): RESIDENTIAL Bldg Size (S/M/L): S

If Commercial or Industrial Facility, Select Operations:

If Residential Select Structure Type: COLONIAL HOME

Number of Floors: 2 Approx. Year Construction: 1930 ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Average tightness

Foundation Description

Foundation Type: BASEMENT Foundation Depth (bgs): 5 Unit: FEET

Foundation Floor Material: POURED CONCRETE

Foundation Wall Material: POURED CONCRETE

Foundation Floor Thickness: ~4" Foundation Wall Thickness: UNK Unit: INCHES

☒ Floor penetrations? Describe Floor Penetrations: floor drains near washer/dryer

☐ Wall penetrations? Describe Wall Penetrations:

Basement is: PARTIALLY FINISHED Basement is: DRY ☐ Sumps/Drains? Water In Sump?: N/A

Describe Foundation Condition (cracks, seepage, etc.) : SOME SMALL CRACKS

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating/Cooling/Ventilation Systems

Heating System: FORCED AIR Heat Fuel Type: GAS ☒ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: GAS Clothes Dryer Fuel Type: —

Water Htr Vent Location: — Dryer Vent Location: —

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: CLARK RESIDENCE Bldg Code: Date: 2-7-17

Bldg Address: 1908 VESTAL ROAD Apt/Suite No: N/A

Bldg City/State/Zip: VESTAL NY, 13850

Make and Model of PID: ~~ppb RAE Plus~~ miniRAE Date of Calibration: 2-7-17

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading	COC Y/N?
BASEMENT	PENNZOIL	1 qt.	U		83	☐
	OLYMPIC ONE PAINT + PRIMER	1 gal	U		77	☐
	VALSPAR ULTRA PAINT + PRIMER	1 qt.	U		77	☐
	FABRIC SOFTENER	1.5 gal	U		<0 ppm	☐
	LAUNDRY DETERGENT	1.5 gal	U			☐
	PRESTONE BRAKE LIQUID	1 pint	U			☐
	MINERAL SPIRITS	1 qt	U			☐
	YANKEE CANDLE	1 qt	U			☐
	AFFRESH WASHER CLEANER	200gr.	U			☐
						☐
						☐
						☐
						☐
						☐
						☐
						☐

HISTORIC READINGS FROM 2015 ppb

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Y Were there any elevated PID readings taken on site? N ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: CLARK RESIDENCE

Address: 1908 VESTAL ROAD Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: Broome

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: OCCASIONALLY Floor Material: CEMENT

☐ Inhabited? ☐ HVAC System On? ☐ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: N/A ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener: N/A

☐ Cleaning Products Used Recently?: Description of Cleaning Products:

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☐ Solvent or Chemical Odors? Describe Odors (if any):

☐ Do Any Occupants Use Solvents At Work? If So, List Solvents Used:

☐ Recent Pesticide/Rodenticide? Description of Last Use:

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

NONE

☐ Any Prior Testing For Radon? If So, When?:

☒ Any Prior Testing For VOCs? If So, When?: 3/11/2015

Sampling Conditions

Weather Conditions: FREEZING RAIN Outdoor Temperature: 33 °F

Current Building Use: COLONIAL HOME Barometric Pressure: 29.88 in(hg)

Product Inventory Complete? Y ☒ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: _____ Address: 1908 VESTAL ROAD N/A VESTAL, NY 13850

SEE MACTEC FDR

Sampling Information

Sampler Name(s): Julie Pallozzi, Lauren Tierney

Sampler Company Code: _____

Sample Collection Date: _____

Date Samples Sent To Lab: _____

Sample Chain of Custody Number: _____

Outdoor Air Sample Location ID: _____

SUMMA Canister Information

Sample ID:					
Location Code:					
Location Type:					
Canister ID:					
Regulator ID:					
Matrix:					
Sampling Method:					

Sampling Area Info

Slab Thickness (inches):					
Sub-Slab Material:					
Sub-Slab Moisture:					
Seal Type:					
Seal Adequate?:	☐	☐	☐	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:					
Vacuum Gauge Start:					
Sample End Date/Time:					
Vacuum Gauge End:					
Sample Duration (hrs):					
Vacuum Gauge Unit:					

Sample QA/QC Readings

Vapor Port Purge:	☐	☐	☐	☐	☐
Purge PID Reading:					
Purge PID Unit:					
Tracer Test Pass:	☐	☐	☐	☐	☐

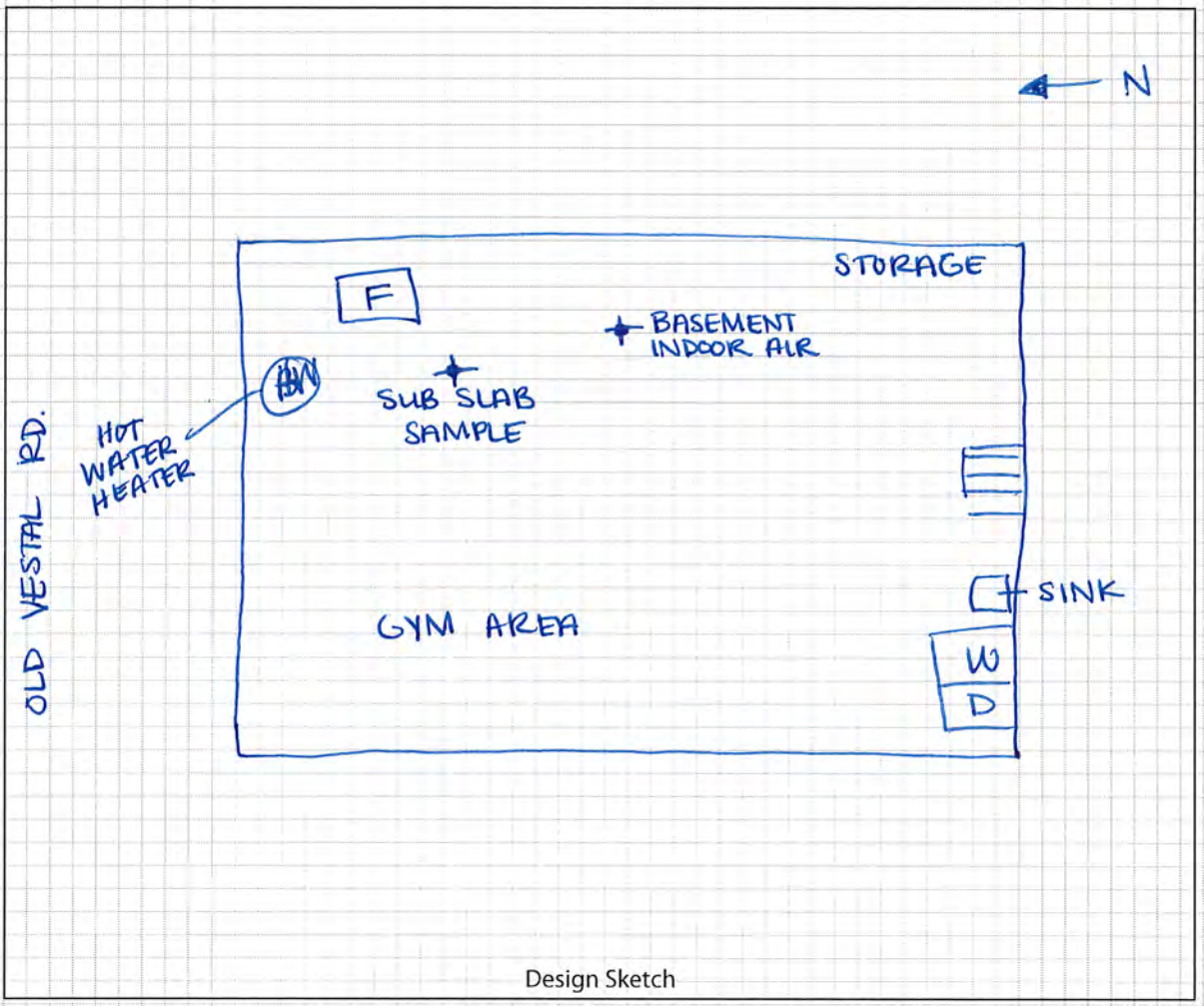
Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level .
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

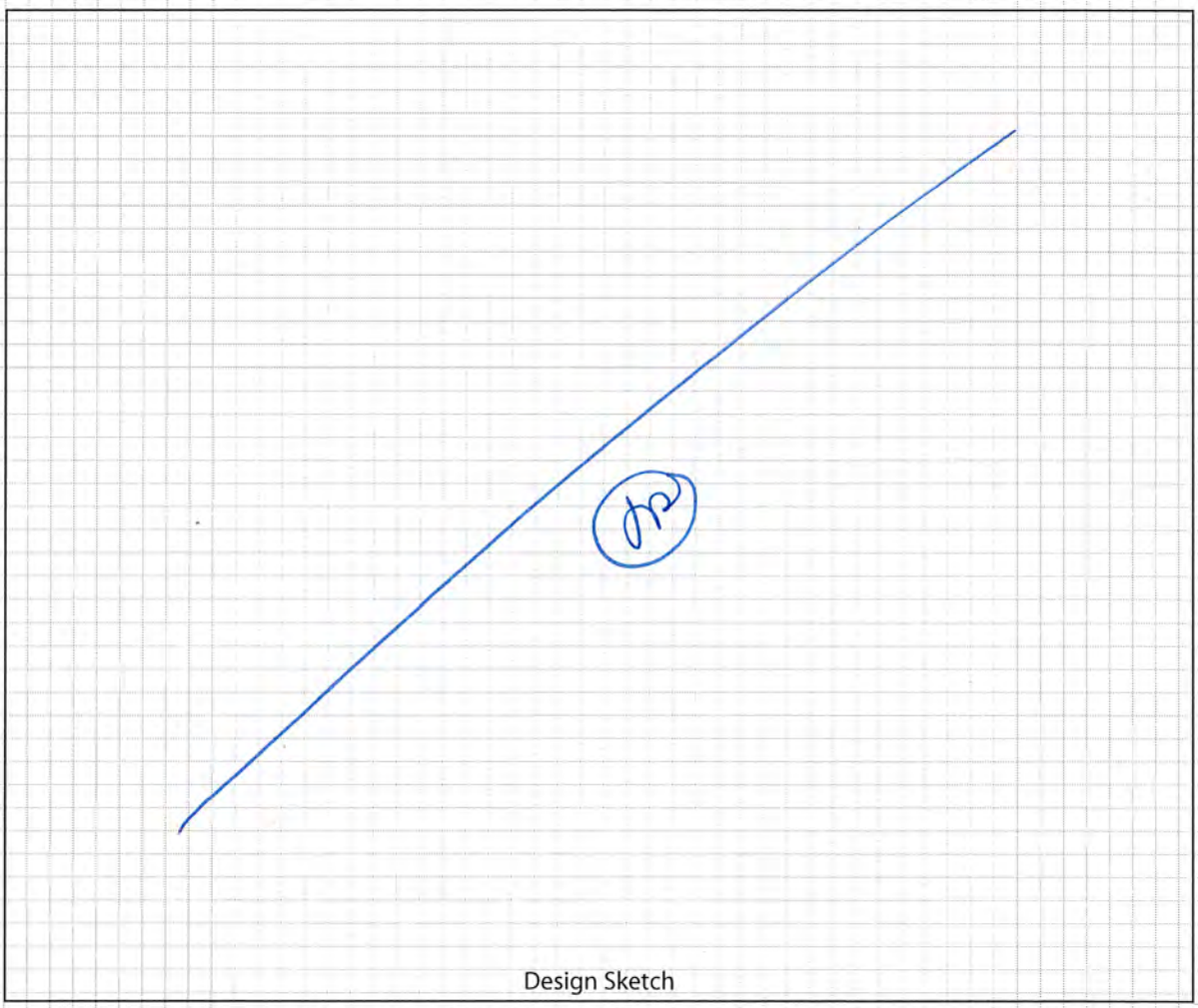
Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

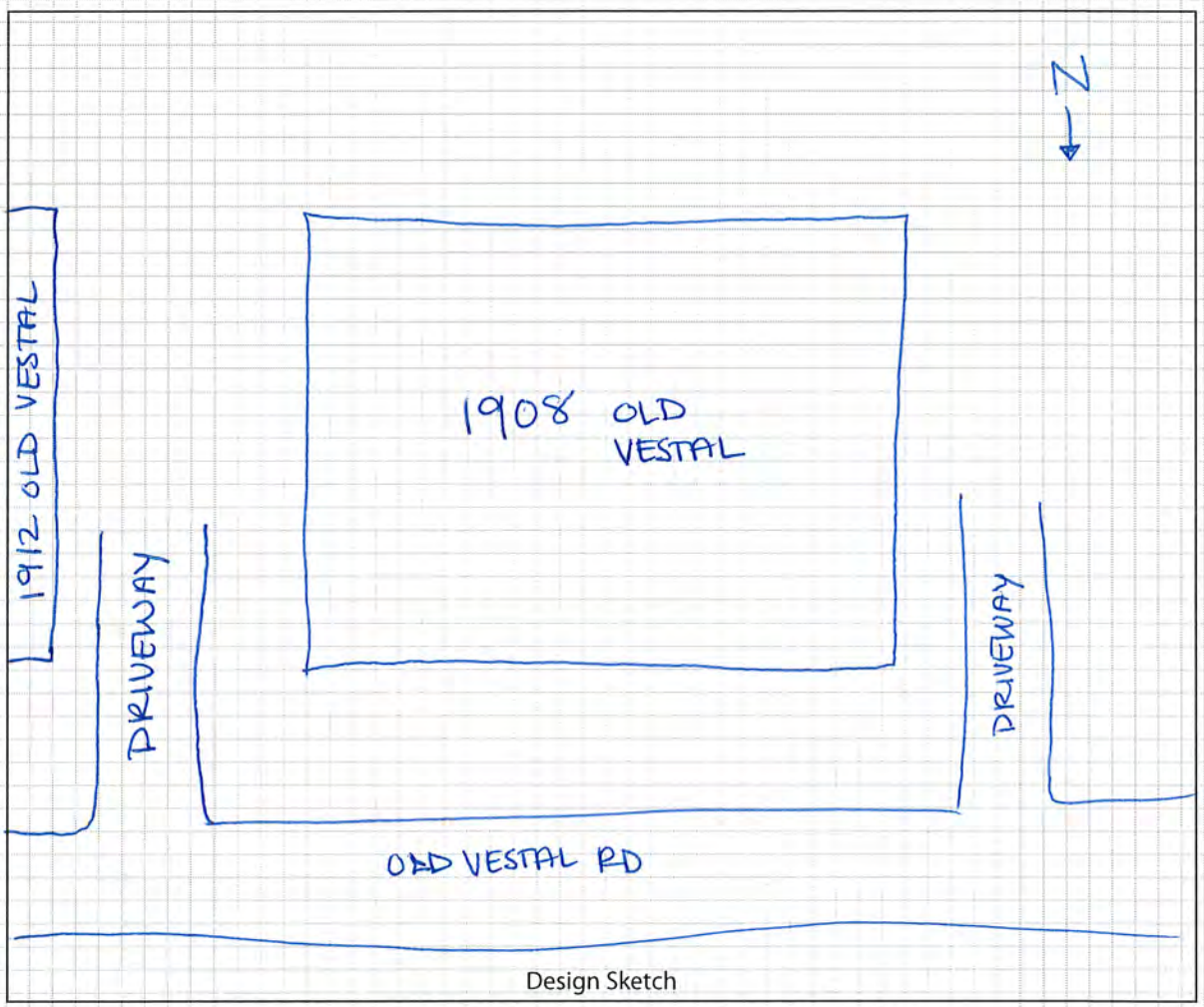
B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Attachment 1 – March 2015 SVI - Photographic Log

Client: NYSDEC ***Project Number:*** **3612122247.03.******

Site Name: Hidden Valley Electronics ***Site Location:*** Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 21

Location:
1908 Old Vestal Rd

Description:
Sample location:
SV-VR-010
SampleID:
HVSVVR010X05XX

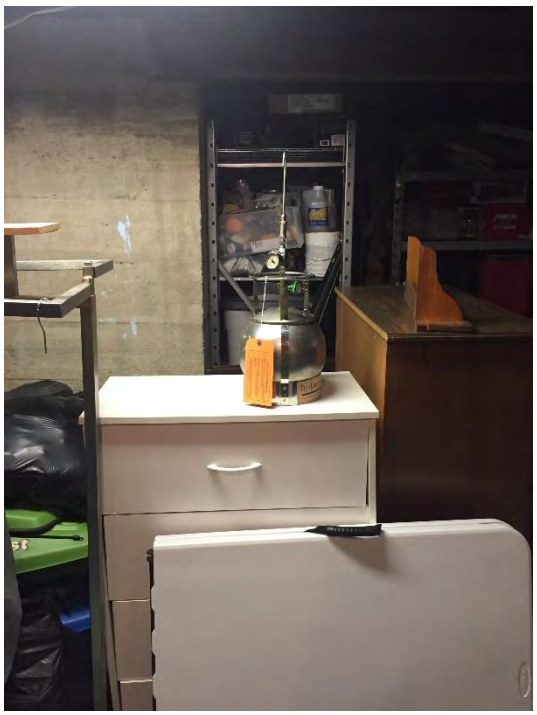
Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 22

Location:
1908 Old Vestal Rd

Description:
Sample Location:
BA-VR-010
Sample ID:
HVIAVR010X04XX



Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 23

Location:
1908 Old Vestal Rd

Description:
Basement products and candles

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 24

Location:
1908 Old Vestal Rd

Description:
Basement paints

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 25

Location:
1908 Old Vestal Rd

Description:
Basement products

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 26

Location:
1908 Old Vestal Rd

Description:
Laundry supplies in basement

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 27

Location:
1908 Old Vestal Rd

Description:
Basement floor drain

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 28

Location:
1908 Old Vestal Rd

Description:
Basement washer, dryer, sink

INDOOR AIR SAMPLING RECORD

PROJECT NAME: HIDDEN VALLEY ELECTRONICS
LOCATION ID: 1912 OLD VESTAL DATE: 2-7-17
PROJECT NO./TASK NO.: 3612122247.03
CLIENT: NYSDEC
PROJECT LOCATION: VESTAL, NY
SAMPLER NAME: LAUREN TIERNEY, JULIE PALLOZZI
WEATHER CONDITIONS ~~(AM)~~ START: FREEZING RAIN, 33°F
SAMPLER SIGNATURE: JP
WEATHER CONDITIONS ~~(PM)~~ END: OVERCAST, 44°F
CHECKED BY: Lauren Tierney DATE: 2-8-17

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		~~FIRST FLOOR AIR SAMPLE~~ SUB SLAB DUP.		AMBIENT AIR SAMPLE	
Flow Regulator Number:	091648	Flow Regulator Number:	09551	Flow Regulator Number:	11506	Flow Regulator Number:	
Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):	24 HR	Flow Rate (mL/min):	
Canister Serial Number:	10811	Canister Serial Number:	10191	Canister Serial Number:	11224	Canister Serial Number:	
Start Date/Time	2-7-17 0924	Start Date/Time	2-7-17 0924	Start Date/Time	2-7-17 0924	Start Date/Time	
Start Pressure ("Hg):	-28	Start Pressure ("Hg):	-28.5	Start Pressure ("Hg):	-30	Start Pressure ("Hg):	
Stop Date/Time	2-8-17 0901	Stop Date/Time	2-8-17 0900	Stop Date/Time	2-8-17 0901	Stop Date/Time	
Stop Pressure ("Hg):	-4	Stop Pressure ("Hg):	-4.5	Stop Pressure ("Hg):	-2	Stop Pressure ("Hg):	
Sample ID:	HVSVVR008X05XX	Sample ID:	HVIAVR008X05XX	Sample ID:	HVSVVR008X05XD	Sample ID:	AA SAMPLE ON 309 MAPLE ST FDR.

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished	UNFINISH	Story/Level: BFPP	BASEMENT	Story/Level:		Direction from Building	
Floor Slab Thickness:	~4"	Room:	" "	Room:		Distance from Building:	
Potential Vapor Entry Points:	FLOOR DRAIN	Potential Vapor Entry Points:	FLOOR DRAIN	Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	CONCRETE	Floor Surface:	CONCRETE	Floor Surface:	SEE SUB SLAB SECTION.	Ground Surface:	
Noticable Odor:	NO	Noticable Odor:	NO	Noticable Odor:		Noticable Odor:	
PID Reading ~~(ppb)~~ ppm:	0.0	PID Reading ~~(ppb)~~ ppm:	0.0	PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	~5"	Intake Height:	~5'	Intake Height:		Intake Height above Ground Surface:	
Helium Test Conducted? Breakthrough %:		Indoor Air Temp	64°F	Indoor Air Temp		Intake tubing?	

Comments/Location Sketch:
PID HEADSPACE: < 0.0 ppm
BACKGROUND: < 0.0 ppm

MACTEC
511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: OLIVER RESIDENCE

Address: 1912 VESTAL ROAD Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: Broome

Contact Information

Preparer's Name: LAUREN TIERNEY Phone No: (207) 775-5401

Preparer's Affiliation: AMEC FOSTER WHEELER Company Code:

Purpose of Investigation: SOIL VAPOR INTRUSION Date of Inspection: 2-7-17

Contact Name: BARBARA OLIVER Affiliation: OWNER

Phone No: (607) 785-1265 Alt. Phone No: Email:

Number of Occupants (total): 1 Number of Children: 0

☒ Occupant Interviewed? ☒ Owner Occupied? ☒ Owner Interviewed?

Owner Name (if different): N/A Owner Phone:

Owner Mailing Address: N/A

Building Details

Bldg Type (Res/Com/Ind/Mixed): RESIDENTIAL Bldg Size (S/M/L): S

If Commercial or Industrial Facility, Select Operations:

If Residential Select Structure Type: CAPE COD HOME

Number of Floors: 2 Approx. Year Construction: 1920 ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

AVERAGE TIGHTNESS

Foundation Description

Foundation Type: BASEMENT Foundation Depth (bgs): ~6' Unit: FEET

Foundation Floor Material: POURED CONCRETE Foundation Floor Thickness: ~4"

Foundation Wall Material: POURED CONCRETE Foundation Wall Thickness: UNK Unit: INCHES

☒ Floor penetrations? Describe Floor Penetrations: TOILET UTILITY, FLOOR DRAIN

☒ Wall penetrations? Describe Wall Penetrations: UTILITY.

Basement is: PARTIALLY FINISHED Basement is: DRY ☒ Sumps/Drains? Water In Sump?: Y

Describe Foundation Condition (cracks, seepage, etc.) :

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating/Cooling/Ventilation Systems

Heating System: FORCED AIR Heat Fuel Type: GAS ☐ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: GAS Clothes Dryer Fuel Type: —

Water Htr Vent Location: — Dryer Vent Location: —

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: OLIVER RESIDENCE Bldg Code: Date: 2-7-17

Bldg Address: 1912 VESTAL ROAD Apt/Suite No: N/A

Bldg City/State/Zip: VESTAL NY, 13850

Make and Model of PID: ~~ppb RAE Plus~~ pp miniRAE Date of Calibration: 2-7-17

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading (ppb)	COC Y/N?
BASEMENT	PROPANE FUEL	14.1	U		32	☐
	TUNGSEAL WOOD STAIN	1/2 pint	U		32	☐
	WOOD FINISH (MINWAX)	8	U		32	☐
	RID-A-BUG	12	U		32	☐
	VICTOR POISON FREE	17.5	U		44	☐
	HOTSHOT WASP + HORNET	14	U		47	☐
	LIQUID WRENCH	11	U		32	☐
	OLYMPIC PREMIUM PLUS PAINT	1 gal	U		42	☐
	UGL DRYLOCK LATEX BASE	1 gal	U		44	☐
	VALSPAR LATEX SATIN FLOOR PAINT	1 gal	U		40	☐
	GLIDDEN ULTRA-HIDE LATEX PAINT	1 gal	U		32	☐
	GREAT STUFF BIG GAP FILLER	20	U		32	☐
	MULTI-PURPOSE FUNGICIDE	19	U		32	☐
	AMERICA'S FINEST SEMI-GLOSS	1 gal	U		48	☐
						☐
						☐

HISTORICAL READINGS FROM 2015

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Y Were there any elevated PID readings taken on site? N ☐ Products with COC?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: OLIVER RESIDENCE

Address: 1912 VESTAL ROAD Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: Broome

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: SELDOM Floor Material: CEMENT

☐ Inhabited? ☐ HVAC System On? ☐ Bathroom Exhaust Fan? ☐ Kitchen Exhaust Fan?

Alternate Heat Source: N/A ☐ Is there smoking in the building?

☐ Air Fresheners? Description/Location of Air Freshener: N/A

☐ Cleaning Products Used Recently?: Description of Cleaning Products:

☐ Cosmetic Products Used Recently?: Description of Cosmetic Products:

☐ New Carpet or Furniture? Location of New Carpet/Furniture:

☐ Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics:

☐ Recent Painting/Staining? Location of New Painting:

☐ Solvent or Chemical Odors? Describe Odors (if any):

☐ Do Any Occupants Use Solvents At Work? If So, List Solvents Used:

☒ Recent Pesticide/Rodenticide? Description of Last Use: NONE RECENTLY - SOME OPENED PRODUCTS (LAST 6 MOS.) IN BASEMENT

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

None

☐ Any Prior Testing For Radon? If So, When?: —

☒ Any Prior Testing For VOCs? If So, When?: MARCH 11 2015

Sampling Conditions

Weather Conditions: FREEZING RAIN Outdoor Temperature: 33 °F

Current Building Use: CAPE COD HOME Barometric Pressure: 29.88 in(hg)

Product Inventory Complete? Y ☒ Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: _____ Address: 1912 VESTAL ROAD N/A VESTAL, NY 13850

Sampling Information

SEE MACTEC FDR

Sampler Name(s): Julie Pallozzi, Lauren Tierney

Sampler Company Code: _____

Sample Collection Date: _____

Date Samples Sent To Lab: _____

Sample Chain of Custody Number: _____

Outdoor Air Sample Location ID: _____

SUMMA Canister Information

Sample ID:					
Location Code:					
Location Type:					
Canister ID:					
Regulator ID:					
Matrix:					
Sampling Method:					

Sampling Area Info

Slab Thickness (inches):					
Sub-Slab Material:					
Sub-Slab Moisture:					
Seal Type:					
Seal Adequate?:	☐	☐	☐	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:					
Vacuum Gauge Start:					
Sample End Date/Time:					
Vacuum Gauge End:					
Sample Duration (hrs):					
Vacuum Gauge Unit:					

Sample QA/QC Readings

Vapor Port Purge:	☐	☐	☐	☐	☐
Purge PID Reading:					
Purge PID Unit:					
Tracer Test Pass:	☐	☐	☐	☐	☐

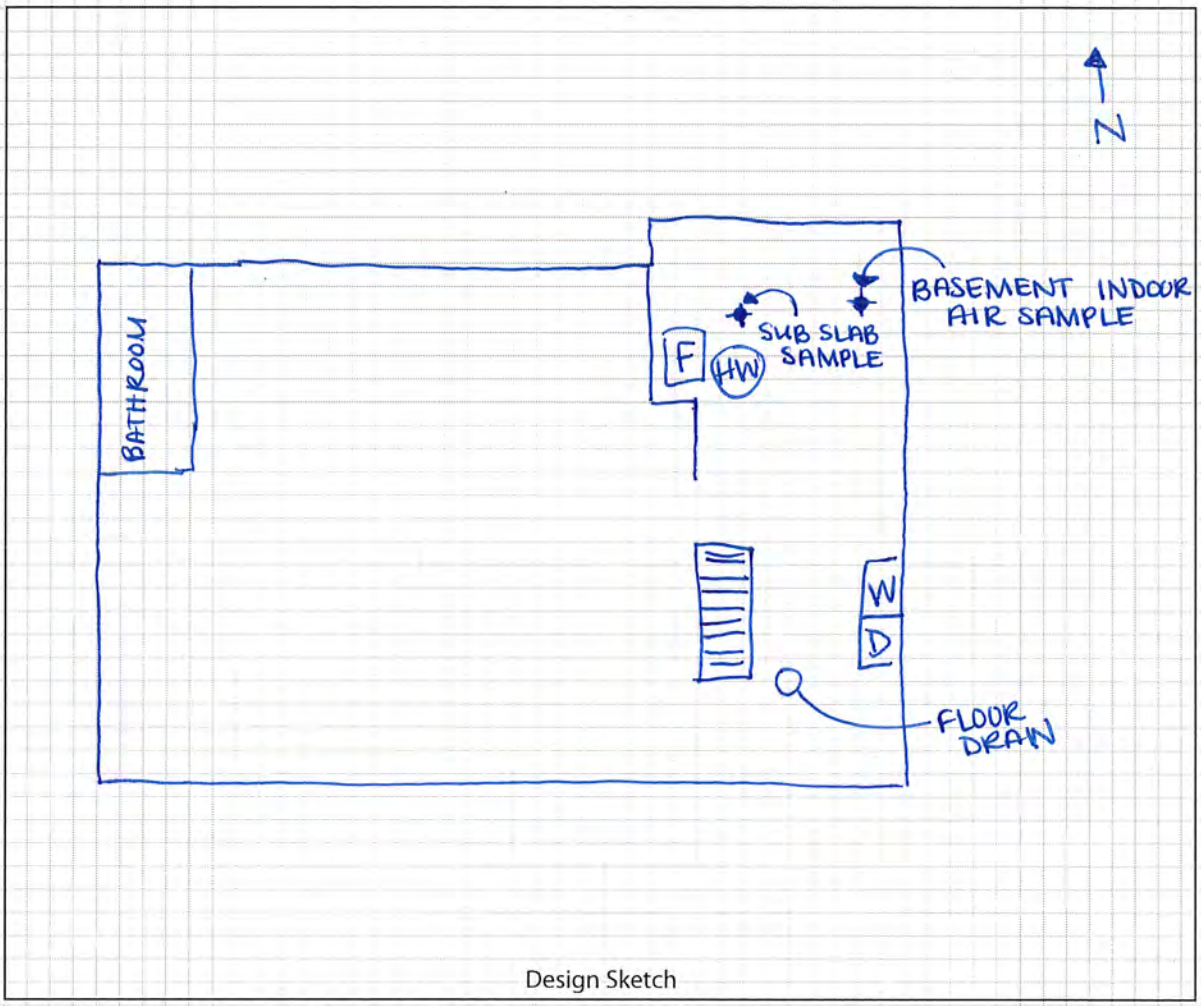
Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level . The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

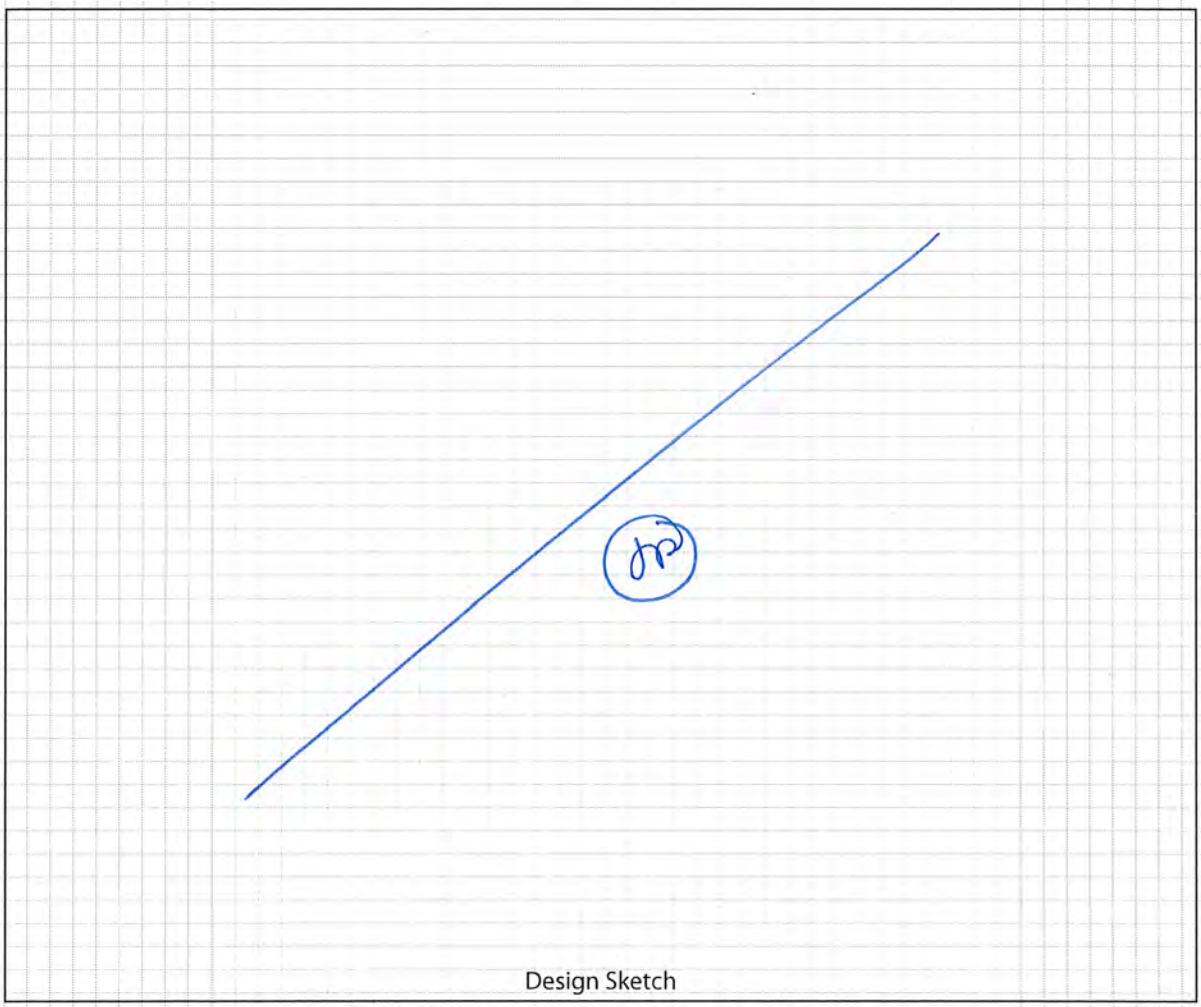
B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building.
The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

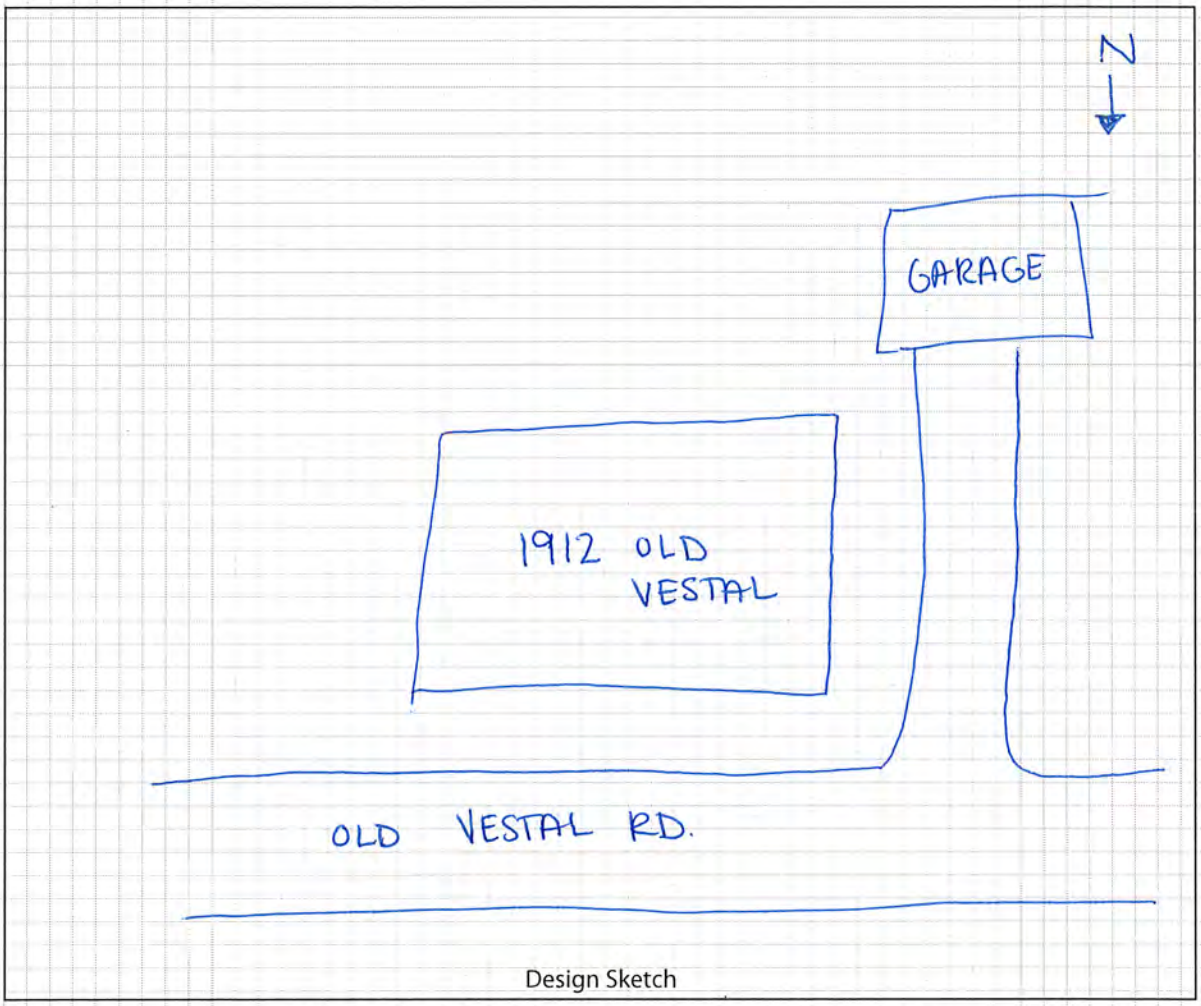
B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Attachment 1 – March 2015 SVI - Photographic Log

Client: NYSDEC ***Project Number:*** **3612122247.03.******

Site Name: Hidden Valley Electronics ***Site Location:*** Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 11

Location:
1912 Old Vestal Rd

Description:
Sample location:
SV-VR-008
SampleID:
HVSVVR008X05XX
HVSVVR008X05XD

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 12

Location:
1912 Old Vestal Rd

Description:
Sample Location:
BA-VR-008
Sample ID:
HVIAVR008X05XX

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 13

Location:
1912 Old Vestal Rd

Description:
Basement products

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 14

Location:
1912 Old Vestal Rd

Description:
Basement products

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 15

Location:
1912 Old Vestal Rd

Description:
Basement products

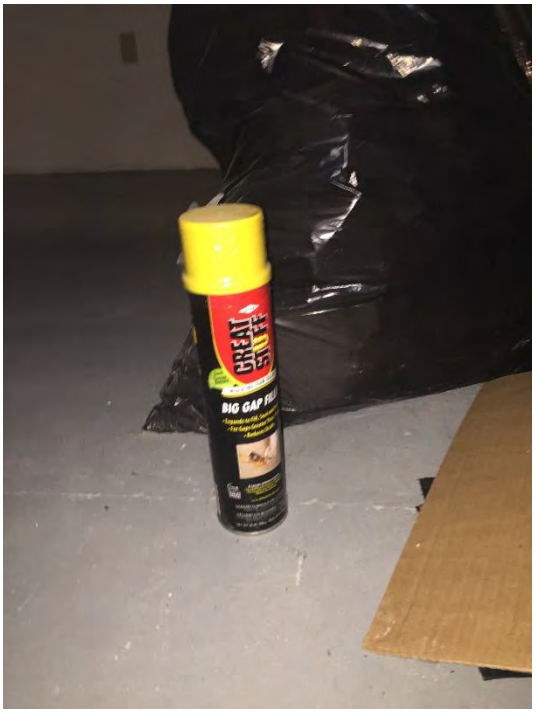
Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 16

Location:
1912 Old Vestal Rd

Description:
Basement products



Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 17

Location:
1912 Old Vestal Rd

Description:
Basement floor drain

Photographer:
Lauren Tierney

Date:
February, 7 2017

Photograph: 18

Location:
1912 Old Vestal Rd

Description:
Basement sump pump

Attachment 1 – March 2015 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer: Lauren Tierney

Date: February, 7 2017

Photograph: 19

Location: 1912 Old Vestal Rd

Description: Basement bathroom

Photographer: Lauren Tierney

Date: February, 7 2017

Photograph: 20

Location: 1912 Old Vestal Rd

Description: Basement washer, dryer, and sink

ATTACHMENT 2

DATA USABILITY SUMMARY REPORTS AND LABORATORY ANALYTICAL REPORTS

DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

1.0 INTRODUCTION

Soil vapor and air samples were collected at the Hidden Valley Electronics Site (Site) in Vestal, New York, in February 2017 and submitted for off-site laboratory analysis. Samples were analyzed by TestAmerica, Inc., located in Knoxville, Tennessee. Samples were analyzed by the following method:

- Volatile organic compounds (VOCs) by USEPA Method TO-15

Results were reported in the following sample delivery group (SDG):

- 140-7080-1

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Summary of Qualification Actions

Laboratory deliverables included:

- Category B deliverable as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations. A table of project control limits is presented in Attachment A. DUSR review checklists and applicable laboratory QC summary forms are included in Attachment B to document DUSR checks and QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Surrogate Spikes (if applicable)
- Field Duplicates (none collected)
- Target Analyte Identification and Quantitation

- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions are applied when necessary based on general procedures in USEPA validation guidelines (USEPA, 2006) and the judgment of the project chemist. The following laboratory or data review qualifiers are used in the final data presentation:

J = concentration is estimated
U = target analyte is not detected above the reported detection limit
UJ = the target compound was not detected and the reporting limit is considered to be estimated

Results are interpreted to be usable as reported by the laboratory or as qualified in the following sections.

2.0 POTENTIAL DATA LIMITATIONS

Based on the DUSR review the majority of data meet the data quality objectives; however, the following potential limitations were identified:

- Results for trichlorofluoromethane, positive detections in all samples, were qualified estimated (J) based on a high LCS recovery. Qualified results are summarized on Table 3 with reason code LCS-H.

- A field duplicate was associated with sample HVSVVR008X05XX. The relative percent difference between the sample result and associated field duplicate result for 2-butanone was greater than the control limit of 50. In addition, inconsistent results were reported for chloromethane, ethanol, and methylene chloride. Positive detections of chloromethane in sample HVSVVR008X05XX and ethanol and methylene chloride in field duplicate HVSVVR008X05XD were greater than the reporting limits, but were not detected in the associated pair. Positive results for 2-butanone, and positive and non-detect results for chloromethane, ethanol, and methylene chloride, were qualified estimated (J/UJ) in sample HVSVVR008X05XX and associated field duplicate HVSVVR008X05XD. Qualified results are summarized on Table 3 with reason code FD.

- As noted in the narrative, the continuing calibration percent differences (%Ds) for a subset of target analytes were outside the control limit of 30. Continuing calibration data were reviewed, and positive and non-detect results for trichlorofluoromethane, dibromochloromethane, and benzyl chloride for all samples were qualified estimated (J/UJ) in the final data set. Qualified results are summarized on Table 3 with reason code CCV%.

3.0 ADDITIONAL QC EXCEEDANCES AND OBSERVATIONS

There were no additional observations or quality control exceedances not specifically addressed above (Section 2.0) or included in Table 3. Unless presented in Table 3, sample results are interpreted to be usable as reported by the laboratory.

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

New York State Department of Environmental Conservation (NYSDEC), 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

USEPA Region 2, 2006. "Validating Volatile Organic Analysis of Ambient Air in Canister by Method TO-15"; SOP # HW-31, Revision 4, Hazardous Waste Support Branch; October 2006.

Data Validator: Julie Ricardi February 27, 2017

Julie Ricardi

Reviewed by: Chris Ricardi, NRCC-EAC February 28, 2017

Chris Ricardi

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

					Method Class	VOCs
					Analysis Method	TO15
					Fraction	N
SDG	**Location**	**Sample ID**	**Sample Date**	**Media**	**Qc Code**	Param_Count
140-7080-1	AA-VR-001	HVAAVR001X02XX	2/8/2017	AIR	FS	52
140-7080-1	BA-MA-002	HVIAMA002X04XX	2/8/2017	AIR	FS	52
140-7080-1	BA-VR-008	HVIAVR008X05XX	2/8/2017	AIR	FS	52
140-7080-1	BA-VR-010	HVIAVR010X05XX	2/8/2017	AIR	FS	52
140-7080-1	SV-MA-002	HVSVMA002X04XX	2/8/2017	SV	FS	52
140-7080-1	SV-VR-008	HVSVVR008X05XD	2/8/2017	SV	FD	52
140-7080-1	SV-VR-008	HVSVVR008X05XX	2/8/2017	SV	FS	52
140-7080-1	SV-VR-010	HVSVVR010X05XX	2/8/2017	SV	FS	52

SV = soil vapor
FS = field sample
FD = field duplicate
N = total
VOCs = volatile organic compounds

Prepared by: BJS 2/25/17
Checked by: JAR 2/26/17

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

		SDG	140-7080-1		140-7080-1		140-7080-1		140-7080-1	
		Location	AA-VR-001		BA-MA-002		BA-VR-008		BA-VR-010	
		Sample Date	2/8/2017		2/8/2017		2/8/2017		2/8/2017	
		Sample ID	HVAAVR001X02XX		HVIAMA002X04XX		HVIAVR008X05XX		HVIAVR010X05XX	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO15	1,1,1-Trichloroethane	ug/m3	0.44	U	0.56		0.45		0.44	U
TO15	1,1,2,2-Tetrachloroethane	ug/m3	0.55	U	0.55	U	0.55	U	0.55	U
TO15	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m3	0.62		0.61		0.61		0.66	
TO15	1,1,2-Trichloroethane	ug/m3	0.44	U	0.44	U	0.44	U	0.44	U
TO15	1,1-Dichloroethane	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	1,1-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	1,2,4-Trichlorobenzene	ug/m3	0.59	U	0.59	U	0.59	U	0.59	U
TO15	1,2,4-Trimethylbenzene	ug/m3	0.39	U	0.72		0.39	U	0.39	U
TO15	1,2-Dibromoethane	ug/m3	0.61	U	0.61	U	0.61	U	0.61	U
TO15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ug/m3	0.56	U	0.56	U	0.56	U	0.56	U
TO15	1,2-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U	0.48	U
TO15	1,2-Dichloroethane	ug/m3	0.32	U	0.32	U	0.32	U	1.1	
TO15	1,2-Dichloropropane	ug/m3	0.37	U	0.37	U	0.37	U	0.37	U
TO15	1,3,5-Trimethylbenzene	ug/m3	0.39	U	0.39	U	0.39	U	0.39	U
TO15	1,3-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U	0.48	U
TO15	1,4-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U	0.48	U
TO15	1,4-Dioxane	ug/m3	0.72	U	0.72	U	0.72	U	1.4	
TO15	2-Butanone	ug/m3	1		2.2		1.2		2.2	
TO15	4-Methyl-2-pentanone	ug/m3	0.82	U	0.82	U	0.82	U	0.82	U
TO15	Benzene	ug/m3	0.97		1.1		0.84		1.1	
TO15	Benzyl chloride	ug/m3	0.83	UJ	0.83	UJ	0.83	UJ	0.83	UJ
TO15	Bromodichloromethane	ug/m3	0.54	U	0.54	U	0.54	U	0.54	U
TO15	Bromoform	ug/m3	0.83	U	0.83	U	0.83	U	0.83	U
TO15	Bromomethane	ug/m3	0.31	U	0.31	U	0.31	U	0.31	U
TO15	Carbon tetrachloride	ug/m3	0.55		0.57		0.47		0.61	
TO15	Chlorobenzene	ug/m3	0.37	U	0.37	U	0.37	U	0.37	U
TO15	Chloroethane	ug/m3	0.21	U	0.21	U	0.21	U	0.21	U
TO15	Chloroform	ug/m3	0.39	U	0.39	U	0.39	U	1	
TO15	Chloromethane	ug/m3	1.2		1.6		1.1		1.7	
TO15	Cis-1,2-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	Cis-1,3-Dichloropropene	ug/m3	0.36	U	0.36	U	0.36	U	0.36	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

		SDG	140-7080-1		140-7080-1		140-7080-1		140-7080-1	
		Location	AA-VR-001		BA-MA-002		BA-VR-008		BA-VR-010	
		Sample Date	2/8/2017		2/8/2017		2/8/2017		2/8/2017	
		Sample ID	HVAAVR001X02XX		HVIAMA002X04XX		HVIAVR008X05XX		HVIAVR010X05XX	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO15	Cyclohexane	ug/m3	0.69	U	0.79		0.69	U	0.69	U
TO15	Dibromochloromethane	ug/m3	0.68	UJ	0.68	UJ	0.68	UJ	0.68	UJ
TO15	Dichlorodifluoromethane	ug/m3	1.3		1.1		1.1		1.2	
TO15	Ethanol	ug/m3	7.2		580		56		150	
TO15	Ethylbenzene	ug/m3	0.35	U	0.6		0.35	U	0.35	
TO15	Hexachlorobutadiene	ug/m3	0.85	U	0.85	U	0.85	U	0.85	U
TO15	Hexane	ug/m3	0.85		1.2		0.76		0.81	
TO15	Isooctane	ug/m3	0.93	U	0.93	U	0.93	U	0.93	U
TO15	Methyl Tertbutyl Ether	ug/m3	0.58	U	0.58	U	0.58	U	0.58	U
TO15	Methylene chloride	ug/m3	0.89		1.9		0.78		2	
TO15	Styrene	ug/m3	0.34	U	0.34	U	0.34	U	0.34	U
TO15	t-Butyl alcohol	ug/m3	0.97	U	0.97	U	0.97	U	0.97	U
TO15	Tetrachloroethene	ug/m3	0.54	U	0.79		0.54	U	0.54	U
TO15	Toluene	ug/m3	2.1		10		1.8		3.3	
TO15	trans-1,2-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	trans-1,3-Dichloropropene	ug/m3	0.36	U	0.36	U	0.36	U	0.36	U
TO15	Trichloroethene	ug/m3	0.21	U	0.71		0.55		0.27	
TO15	Trichlorofluoromethane	ug/m3	1.7	J	1.7	J	1.6	J	1.8	J
TO15	Vinyl chloride	ug/m3	0.1	U	0.1	U	0.1	U	0.1	U
TO15	Xylene, o	ug/m3	0.38		0.61		0.35	U	0.39	
TO15	Xylenes (m&p)	ug/m3	1.1		2		0.8		1.1	

J = concentration is estimated
U = target analyte is not detected above the reported detection limit
UJ = the target compound was not detected and the reporting limit is considered to be estimated
ug/m3 = microgram per cubic meter

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

		SDG	140-7080-1		140-7080-1		140-7080-1		140-7080-1	
		Location	SV-MA-002		SV-VR-008		SV-VR-008		SV-VR-010	
		Sample Date	2/8/2017		2/8/2017		2/8/2017		2/8/2017	
		Sample ID	HVSVMA002X04XX		HVSVVR008X05XD		HVSVVR008X05XX		HVSVVR010X05XX	
		Qc Code	FS		FD		FS		FS	
Method	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO15	1,1,1-Trichloroethane	ug/m3	47		65		67		67	
TO15	1,1,2,2-Tetrachloroethane	ug/m3	0.55	U	0.55	U	0.55	U	0.55	U
TO15	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m3	0.99		1.6		1.6		2.1	
TO15	1,1,2-Trichloroethane	ug/m3	0.44	U	0.44	U	0.44	U	0.44	U
TO15	1,1-Dichloroethane	ug/m3	0.45		0.32	U	0.32	U	0.62	
TO15	1,1-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	1,2,4-Trichlorobenzene	ug/m3	0.59	U	0.59	U	0.59	U	0.59	U
TO15	1,2,4-Trimethylbenzene	ug/m3	0.39	U	0.39	U	0.39	U	0.39	U
TO15	1,2-Dibromoethane	ug/m3	0.61	U	0.61	U	0.61	U	0.61	U
TO15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ug/m3	0.56	U	0.56	U	0.56	U	0.56	U
TO15	1,2-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U	0.48	U
TO15	1,2-Dichloroethane	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	1,2-Dichloropropane	ug/m3	0.37	U	0.37	U	0.37	U	0.37	U
TO15	1,3,5-Trimethylbenzene	ug/m3	0.39	U	0.39	U	0.39	U	0.39	U
TO15	1,3-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U	0.48	U
TO15	1,4-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U	0.48	U
TO15	1,4-Dioxane	ug/m3	0.72	U	0.72	U	0.72	U	0.72	U
TO15	2-Butanone	ug/m3	0.96		3.5	J	1.2	J	0.94	U
TO15	4-Methyl-2-pentanone	ug/m3	0.82	U	0.89		0.82	U	1.5	
TO15	Benzene	ug/m3	0.41		0.26	U	0.26	U	0.26	U
TO15	Benzyl chloride	ug/m3	0.83	UJ	0.83	UJ	0.83	UJ	0.83	UJ
TO15	Bromodichloromethane	ug/m3	0.54	U	0.54	U	0.54	U	0.54	U
TO15	Bromoform	ug/m3	0.83	U	0.83	U	0.83	U	0.83	U
TO15	Bromomethane	ug/m3	0.31	U	0.31	U	0.31	U	0.31	U
TO15	Carbon tetrachloride	ug/m3	0.31		0.25	U	0.25	U	1.1	
TO15	Chlorobenzene	ug/m3	0.37	U	0.37	U	0.37	U	0.37	U
TO15	Chloroethane	ug/m3	0.21	U	0.21	U	0.21	U	0.21	U
TO15	Chloroform	ug/m3	0.39	U	3.8		3.8		11	
TO15	Chloromethane	ug/m3	0.41	U	0.41	UJ	0.47	J	0.41	U
TO15	Cis-1,2-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	Cis-1,3-Dichloropropene	ug/m3	0.36	U	0.36	U	0.36	U	0.36	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

		SDG	140-7080-1		140-7080-1		140-7080-1		140-7080-1	
		Location	SV-MA-002		SV-VR-008		SV-VR-008		SV-VR-010	
		Sample Date	2/8/2017		2/8/2017		2/8/2017		2/8/2017	
		Sample ID	HVSVMA002X04XX		HVSVVR008X05XD		HVSVVR008X05XX		HVSVVR010X05XX	
		Qc Code	FS		FD		FS		FS	
Method	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO15	Cyclohexane	ug/m3	0.69	U	0.69	U	0.69	U	0.69	U
TO15	Dibromochloromethane	ug/m3	0.68	UJ	0.68	UJ	0.68	UJ	0.68	UJ
TO15	Dichlorodifluoromethane	ug/m3	1.2		1.1		1.1		1.1	
TO15	Ethanol	ug/m3	40		7.4	J	3.8	UJ	6.7	
TO15	Ethylbenzene	ug/m3	0.35	U	0.35	U	0.35	U	0.35	U
TO15	Hexachlorobutadiene	ug/m3	0.85	U	0.85	U	0.85	U	0.85	U
TO15	Hexane	ug/m3	2.4		0.7	U	0.7	U	0.7	U
TO15	Isooctane	ug/m3	0.93	U	0.93	U	0.93	U	0.93	U
TO15	Methyl Tertbutyl Ether	ug/m3	0.58	U	0.58	U	0.58	U	0.58	U
TO15	Methylene chloride	ug/m3	11		1	J	0.69	UJ	1.1	
TO15	Styrene	ug/m3	0.34	U	0.34	U	0.34	U	0.34	U
TO15	t-Butyl alcohol	ug/m3	0.97	U	0.97	U	0.97	U	0.97	U
TO15	Tetrachloroethene	ug/m3	0.54	U	0.8		0.71		0.54	U
TO15	Toluene	ug/m3	2.1		0.45	U	0.45	U	0.83	
TO15	trans-1,2-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U	0.32	U
TO15	trans-1,3-Dichloropropene	ug/m3	0.36	U	0.36	U	0.36	U	0.36	U
TO15	Trichloroethene	ug/m3	52		42		42		100	
TO15	Trichlorofluoromethane	ug/m3	3.9	J	3.5	J	3.5	J	4.5	J
TO15	Vinyl chloride	ug/m3	0.1	U	0.1	U	0.1	U	0.1	U
TO15	Xylene, o	ug/m3	0.35	U	0.35	U	0.35	U	0.35	U
TO15	Xylenes (m&p)	ug/m3	0.66		0.35	U	0.35	U	0.5	

J = concentration is estimated
U = target analyte is not detected above the reported detection limit
UJ = the target compound was not detected and the reporting limit is considered to be estimated
ug/m3 = microgram per cubic meter

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

SDG	Method	Lab Sample Id	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Val Reason Code	Result Units
140-7080-1	TO15	140-7080-1	HVIAMA002X04XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-1	HVIAMA002X04XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-1	HVIAMA002X04XX	Trichlorofluoromethane	1.7		1.7	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-2	HVSVMA002X04XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-2	HVSVMA002X04XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-2	HVSVMA002X04XX	Trichlorofluoromethane	3.9		3.9	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-3	HVAAVR001X02XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-3	HVAAVR001X02XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-3	HVAAVR001X02XX	Trichlorofluoromethane	1.7		1.7	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-4	HVIAVR008X05XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-4	HVIAVR008X05XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-4	HVIAVR008X05XX	Trichlorofluoromethane	1.6		1.6	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	2-Butanone	1.2		1.2	J	FD	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	Chloromethane	0.47		0.47	J	FD	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	Ethanol	3.8	U	3.8	UJ	FD	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	Methylene chloride	0.69	U	0.69	UJ	FD	ug/m3
140-7080-1	TO15	140-7080-5	HVSVVR008X05XX	Trichlorofluoromethane	3.5		3.5	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	2-Butanone	3.5		3.5	J	FD	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	Chloromethane	0.41	U	0.41	UJ	FD	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	Ethanol	7.4		7.4	J	FD	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	Methylene chloride	1		1	J	FD	ug/m3
140-7080-1	TO15	140-7080-6	HVSVVR008X05XD	Trichlorofluoromethane	3.5		3.5	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-7	HVIAVR010X05XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-7	HVIAVR010X05XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-7	HVIAVR010X05XX	Trichlorofluoromethane	1.8		1.8	J	CCV%D, LCS-H	ug/m3
140-7080-1	TO15	140-7080-8	HVSVVR010X05XX	Benzyl chloride	0.83	U *	0.83	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-8	HVSVVR010X05XX	Dibromochloromethane	0.68	U	0.68	UJ	CCV%D	ug/m3
140-7080-1	TO15	140-7080-8	HVSVVR010X05XX	Trichlorofluoromethane	4.5		4.5	J	CCV%D, LCS-H	ug/m3

J = concentration is estimated
U = target analyte is not detected above the reported detection limit
UJ = the target compound was not detected and the reporting limit is considered to be estimated
CCV%D = continuing calibration percent difference exceeds control limit
LCS-H = LCS percent recovery is greater than upper control limit
FD = field duplicate results exceed precision goal

Prepared by: BJS 2/27/17
Checked by: JAR 2/27/17

ATTACHMENT A
SUMMARY OF QC LIMITS

PARAMETER	QC TEST	ANALYTE	Air (%R)
Volatiles	Surrogate	All Surrogate Compounds	Lab Limits
	LCS	All Target Compounds	70 - 130

Notes:
LCS - Laboratory Control Sample
%R = percent recovery
QC Limits are based on USEPA Region II Data Validation Guidelines and Project QA/QC Objectives

DATA USABILITY SUMMARY REPORT
FEBRUARY 2017 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

ATTACHMENT B

VOCs in Air

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Hidden Valley Electronics
Method : TO-15
Laboratory and SDG(s): TAL Knox. **SDG#** 140-7080-1
Date: 2/24/17
Reviewer: JULIE RICARDI
Review Level [X] NYSDEC DUSR USEPA Region II Guideline

Control limits are from EPA Region 2 - SOP# HW-31, October 2006.

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
Were problems noted? CCV & LCS noted; see evaluation below
Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)
Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)

2. ☑ **Holding time and Sample Collection**
Were samples analyzed within the 30 day holding time? (YES) NO (circle one)

3. ☑ **QC Blanks** (use 5x rule for calculating action levels)
Are method blanks free of contamination? (YES) NO (circle one)

4. ☑ **Instrument Tuning – Data Package Narrative Review**
Did the laboratory narrative identify any results that were not within method criteria? YES (NO) (circle one)
If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Instrument Calibration - Data Package Narrative Review**
Did the laboratory narrative identify compounds that were not within method criteria (%RSD ≤30; %D ≤30) in the initial calibration and/or continuing calibration standards? (YES) NO
Qualify result for CCV analytes qualified by lab; J/UJ based on prof. judgment
Did the laboratory qualify results based on initial or continuing calibration exceedances? (YES) NO NA
If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Internal Standards – Data Package Narrative Review**
(Area Limits = +40% to -40%, RTs within 20 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
Did the laboratory narrative identify any sample internal standards that were not within criteria?
YES (NO) (circle one)

Did the laboratory qualify results based on internal standard exceedances? YES (NO) NA
If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Surrogate Recovery**

Were all results within laboratory limits? (YES) NO (circle one)

8. ☑ **Field Duplicates**
Were Field Duplicates submitted/analyzed? (YES) NO
HVSVVR008X05XX/HVSVVR008X05X1); See attached for (Qual)
Were all results were within criteria (Field Dup RPD goal = 50). YES (NO) NA (circle one)

9. ☑ **Laboratory Control Sample Results** (limits 70-130%)

Were all results within limits? YES (NO) (circle one)
See attached summaries

10. ☑ **Raw Data Review and Calculation Checks**
See attached

11. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? (YES) NO (circle one)

12. ☑ **Tables Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? (YES) NO (circle one)

Table 4 (TICs) Did lab report TICs? YES (NO) (circle one)

Sample Summary

Client: New York State D.E.C.
Project/Site: Hidden Valley Electronics # 704029

TestAmerica Job ID: 140-7080-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-7080-1	HVIAMA002X04XX	Air	02/08/17 08:04	02/10/17 13:00
140-7080-2	HVSVMA002X04XX	Air	02/08/17 08:04	02/10/17 13:00
140-7080-3	HVAAVR001X02XX	Air	02/08/17 08:15	02/10/17 13:00
140-7080-4	HVIAVR008X05XX	Air	02/08/17 09:00	02/10/17 13:00
140-7080-5	HVSVVR008X05XX	Air	02/08/17 09:01	02/10/17 13:00
140-7080-6	HVSVVR008X05XD	Air	02/08/17 09:01	02/10/17 13:00
140-7080-7	HVIAVR010X05XX	Air	02/08/17 09:41	02/10/17 13:00
140-7080-8	HVSVVR010X05XX	Air	02/08/17 09:42	02/10/17 13:00

Case Narrative

Client: New York State D.E.C.
Project/Site: Hidden Valley Electronics # 704029

TestAmerica Job ID: 140-7080-1

Job ID: 140-7080-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative
140-7080-1

Comments
No additional comments.

Receipt
The samples were received on 2/10/2017 1:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA
Method(s) TO 15 LL, TO-15: Can Certification Comments:
Due to the large number of analytes in the CCV, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for several analytes to recover outside criteria for this method when analyzing for a full list. The CCV associated with the can cleaning batches had analytes outside control limits. These results have been reported and qualified.

Method(s) TO 15 LL, TO-14A, TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

Method(s) TO 15 LL: The continuing calibration verification (CCV) and laboratory control sample (LCS) associated with batch 140-8578 exhibited % difference of > 30% and outside control limits for the following analyte(s) Benzyl chloride, vinyl bromide and/or Trichlorofluoromethane, however the results were within acceptance limits. The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. According to the laboratory standard operating procedure, the continuing calibration is acceptable if it meets the laboratory control sample acceptance criteria. Benzyl chloride recovered outside control limits for the LCS. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

2/26/17

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Lab Sample ID: CCVIS 140-8578/2 Calibration Date: 02/14/2017 12:02

Instrument ID: MR Calib Start Date: 01/16/2017 18:15

GC Column: RTX-5 ID: 0.32(mm) Calib End Date: 01/17/2017 10:29

Lab File ID: RB14CCVa.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorodifluoromethane	Ave	0.2219	0.2900		2.61	2.00	30.7*	30.0
Propene	Ave	1.040	1.074		2.06	2.00	3.2	30.0
Dichlorodifluoromethane	Ave	1.811	1.906		2.11	2.00	5.3	30.0
Chloromethane	Ave	0.3400	0.3618		2.13	2.00	6.4	30.0
1,2-Dichlorotetrafluoroethane	Ave	2.050	2.605		2.54	2.00	27.0	30.0
Acetaldehyde	Ave	0.3052	0.3634		11.9	10.0	19.1	30.0
Vinyl chloride	Ave	0.9750	1.117		2.29	2.00	14.5	30.0
1,3-Butadiene	Ave	0.6890	0.7688		2.23	2.00	11.6	30.0
Butane	Ave	1.237	1.554		2.51	2.00	25.6	30.0
Bromomethane	Ave	0.8530	1.055		2.47	2.00	23.7	30.0
Chloroethane	Ave	0.3844	0.4419		2.30	2.00	14.9	30.0
Ethanol	Ave	0.2559	0.3191		12.5	10.0	24.7	30.0
Vinyl bromide	Ave	0.7956	1.060	ntc	2.66	2.00	33.2*	30.0
2-Methylbutane	Ave	0.7496	0.8882		2.37	2.00	18.5	30.0
Acrolein	Ave	0.2879	0.2734		1.90	2.00	-5.0	30.0
Trichlorofluoromethane JLW	Ave	2.486	3.388		2.73	2.00	36.3*	30.0
Acetonitrile	Ave	0.4318	0.4425		2.05	2.00	2.5	30.0
Acetone	Ave	0.4605	0.4777		6.22	6.00	3.7	30.0
Isopropyl alcohol	Ave	1.354	1.459		6.46	6.00	7.7	30.0
Pentane	Ave	0.1947	0.2245		2.31	2.00	15.3	30.0
Ethyl ether	Ave	1.131	1.186		2.10	2.00	4.9	30.0
1,1-Dichloroethene	Ave	1.101	1.206		2.19	2.00	9.5	30.0
Acrylonitrile	Ave	0.7062	0.7761		2.20	2.00	9.9	30.0
t-Butyl alcohol	Ave	1.480	1.695		2.29	2.00	14.5	30.0
1,1,2-Trichlorotrifluoroethane	Ave	2.112	2.466		2.33	2.00	16.7	30.0
Methylene Chloride	Ave	1.036	1.074		2.07	2.00	3.7	30.0
3-Chloropropene	Ave	0.7792	0.9719		2.49	2.00	24.7	30.0
Carbon disulfide	Ave	2.839	3.176		2.24	2.00	11.8	30.0
trans-1,2-Dichloroethene	Ave	1.170	1.282		2.19	2.00	9.5	30.0
2-Methylpentane	Ave	2.152	2.346		2.18	2.00	9.0	30.0
Methyl tert-butyl ether	Ave	2.472	2.912		2.36	2.00	17.8	30.0
1,1-Dichloroethane	Ave	1.844	2.044		2.22	2.00	10.8	30.0
Vinyl acetate	Ave	2.613	2.948		2.26	2.00	12.8	30.0
2-Butanone	Ave	0.4822	0.5500		2.28	2.00	14.1	30.0
Hexane	Ave	0.7573	0.8265		2.18	2.00	9.1	30.0
Isopropyl ether	Ave	3.457	3.877		2.24	2.00	12.1	30.0
cis-1,2-Dichloroethene	Ave	1.219	1.341		2.20	2.00	10.0	30.0
Ethyl acetate	Ave	2.200	2.591		2.36	2.00	17.8	30.0
Chloroform	Ave	2.082	2.393		2.30	2.00	14.9	30.0
Tert-butyl ethyl ether	Ave	2.521	2.906		2.31	2.00	15.3	30.0

FORM VII TO 15 LL

JR 2/26/17

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Lab Sample ID: CCVIS 140-8578/2 Calibration Date: 02/14/2017 12:02

Instrument ID: MR Calib Start Date: 01/16/2017 18:15

GC Column: RTX-5 ID: 0.32(mm) Calib End Date: 01/17/2017 10:29

Lab File ID: RB14CCVa.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Tetrahydrofuran	Ave	1.197	1.306		2.18	2.00	9.1	30.0
1,1,1-Trichloroethane	Ave	2.078	2.517		2.42	2.00	21.1	30.0
1,2-Dichloroethane	Ave	0.2408	0.2890		2.40	2.00	20.0	30.0
1-Butanol	Ave	0.0809	0.0872		2.16	2.00	7.8	30.0
Benzene	Ave	0.6956	0.7363		2.12	2.00	5.9	30.0
Cyclohexane	Ave	0.0994	0.1083		2.18	2.00	9.0	30.0
Carbon tetrachloride	Ave	0.4255	0.5256		2.47	2.00	23.5	30.0
2,3-Dimethylpentane	Ave	0.1475	0.1623		2.20	2.00	10.0	30.0
Thiophene	Ave	0.3612	0.4000		2.22	2.00	10.8	30.0
Tert-amyl methyl ether	Ave	0.5308	0.6533		2.46	2.00	23.1	30.0
2,2,4-Trimethylpentane	Ave	0.9488	1.040		2.19	2.00	9.6	30.0
1,2-Dichloropropane	Ave	0.2404	0.2684		2.23	2.00	11.7	30.0
Heptane	Ave	0.2264	0.2534		2.24	2.00	12.0	30.0
Trichloroethene	Ave	0.3144	0.3326		2.12	2.00	5.8	30.0
Dibromomethane	Ave	0.2419	0.2866		2.37	2.00	18.5	30.0
1,4-Dioxane	Ave	0.1115	0.1130		2.03	2.00	1.4	30.0
Bromodichloromethane	Ave	0.4021	0.4842		2.41	2.00	20.4	30.0
Methyl methacrylate	Ave	0.2508	0.3001		2.39	2.00	19.6	30.0
Methylcyclohexane	Ave	0.4619	0.5216		2.26	2.00	12.9	30.0
4-Methyl-2-pentanone (MIBK)	Ave	0.4695	0.5436		2.32	2.00	15.8	30.0
cis-1,3-Dichloropropene	Ave	0.3476	0.3925		2.26	2.00	12.9	30.0
trans-1,3-Dichloropropene	Ave	0.3550	0.4212		2.37	2.00	18.7	30.0
Toluene	Ave	0.8739	1.032		2.36	2.00	18.2	30.0
1,1,2-Trichloroethane	Ave	0.2754	0.3069		2.23	2.00	11.5	30.0
2-Methylthiophene	Ave	0.7609	0.9019		2.37	2.00	18.5	30.0
3-Methylthiophene	Ave	0.7494	0.8929		2.38	2.00	19.1	30.0
2-Hexanone	Ave	0.2576	0.3090		2.40	2.00	19.9	30.0
Dibromochloromethane J(UJ	Ave	0.5036	0.6558		2.60	2.00	30.2*	30.0
Octane	Ave	0.2781	0.3232		2.32	2.00	16.2	30.0
1,2-Dibromoethane	Ave	0.4814	0.5912		2.46	2.00	22.8	30.0
Tetrachloroethene	Ave	0.3356	0.3822		2.28	2.00	13.9	30.0
Chlorobenzene	Ave	0.7195	0.8125		2.26	2.00	12.9	30.0
2,3-Dimethylheptane	Ave	0.7552	0.8726		2.31	2.00	15.5	30.0
Ethylbenzene	Ave	1.174	1.291		2.20	2.00	10.0	30.0
2-Ethylthiophene	Ave	0.8633	1.014		2.35	2.00	17.4	30.0
m-Xylene & p-Xylene	Ave	0.8819	0.9878		4.48	4.00	12.0	30.0
Bromoform	Ave	0.6483	0.7379		2.28	2.00	13.8	30.0
Styrene	Ave	0.6255	0.7243		2.32	2.00	15.8	30.0
Nonane	Ave	0.5076	0.5825		2.30	2.00	14.8	30.0
o-Xylene	Ave	0.9227	0.998		2.16	2.00	8.1	30.0
1,1,2,2-Tetrachloroethane	Ave	0.7011	0.7968		2.27	2.00	13.6	30.0

FORM VII TO 15 LL

JW 2/16/17

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Lab Sample ID: CCVIS 140-8578/2 Calibration Date: 02/14/2017 12:02

Instrument ID: MR Calib Start Date: 01/16/2017 18:15

GC Column: RTX-5 ID: 0.32(mm) Calib End Date: 01/17/2017 10:29

Lab File ID: RB14CCVa.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2,3-Trichloropropane	Ave	0.1972	0.2298		2.33	2.00	16.6	30.0
Isopropylbenzene	Ave	1.302	1.514		2.33	2.00	16.3	30.0
Propylbenzene	Ave	0.3605	0.4215		2.34	2.00	16.9	30.0
2-Chlorotoluene	Ave	0.3395	0.3706		2.18	2.00	9.2	30.0
4-Ethyltoluene	Ave	1.306	1.574		2.41	2.00	20.6	30.0
1,3,5-Trimethylbenzene	Ave	0.6336	0.7149		2.26	2.00	12.8	30.0
Alpha Methyl Styrene	Ave	0.5024	0.6291		2.50	2.00	25.2	30.0
Decane	Ave	0.6458	0.7938		2.46	2.00	22.9	30.0
tert-Butylbenzene	Ave	1.115	1.410		2.53	2.00	26.5	30.0
1,2,4-Trimethylbenzene	Ave	1.135	1.370		2.41	2.00	20.7	30.0
1,3-Dichlorobenzene	Ave	0.8032	0.9916		2.47	2.00	23.5	30.0
sec-Butylbenzene	Ave	1.594	2.121	nfc	2.66	2.00	33.0*	30.0
Benzyl chloride J/UJ	Ave	0.8762	1.168		2.67	2.00	33.3*	30.0
1,4-Dichlorobenzene	Ave	0.8171	1.006		2.46	2.00	23.1	30.0
4-Isopropyltoluene	Ave	1.302	1.725	nfc	2.65	2.00	32.5*	30.0
1,2,3-Trimethylbenzene	Ave	0.9045	1.084		2.40	2.00	19.9	30.0
Butylcyclohexane	Ave	0.8419	1.052		2.50	2.00	25.0	30.0
1,2-Dichlorobenzene	Ave	0.7845	0.999		2.55	2.00	27.3	30.0
Indane	Ave	1.008	1.239		2.46	2.00	22.8	30.0
Indene	QuaF		0.9903		2.11	2.00	5.6	30.0
Butylbenzene	Ave	1.256	1.708	nfc	2.72	2.00	36.0*	30.0
Undecane	Ave	0.7309	0.9337		2.56	2.00	27.8	30.0
1,2-Dimethyl-4-Ethylbenzene	QuaF		1.323		2.35	2.00	17.4	30.0
1,2-Dibromo-3-Chloropropane	Ave	0.4119	0.5094		2.47	2.00	23.7	30.0
1,2,4,5-Tetramethylbenzene	Ave	1.147	1.535	nfc	2.68	2.00	33.9*	30.0
1,2,3,5-Tetramethylbenzene	Ave	0.7194	0.9300		2.59	2.00	29.3	30.0
1,2,3,4-Tetramethylbenzene	Ave	0.9719	1.268	nfc	2.61	2.00	30.4*	30.0
Dodecane	Ave	0.7623	0.9503		2.49	2.00	24.7	30.0
1,2,4-Trichlorobenzene	Ave	0.9333	1.024		2.20	2.00	9.8	30.0
Naphthalene	Ave	1.723	2.029		2.36	2.00	17.8	30.0
Benzo(b)thiophene	Ave	0.9449	1.112		2.35	2.00	17.7	30.0
Hexachlorobutadiene	Ave	0.8326	0.8824		2.12	2.00	6.0	30.0
1,2,3-Trichlorobenzene	Ave	0.8487	0.9905		2.33	2.00	16.7	30.0
2-Methylnaphthalene	Ave	0.2033	0.2537		7.80	6.25	24.8	50.0
1-Methylnaphthalene	Ave	0.1899	0.1967		6.47	6.25	3.6	50.0
4-Bromofluorobenzene (Surr)	Ave	0.6257	0.5919		3.78	4.00	-5.4	30.0

2/26/17

FORM VII TO 15 LL

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS) (Continued)

Lab Sample ID: LCS 140-8578/1002
Matrix: Air
Analysis Batch: 8578

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	2.00	2.07		ppb v/v		104	70 - 130
m-Xylene & p-Xylene	4.00	4.48		ppb v/v		112	70 - 130
o-Xylene	2.00	2.16		ppb v/v		108	70 - 130
Styrene	2.00	2.32		ppb v/v		116	70 - 130
t-Butyl alcohol	2.00	2.29		ppb v/v		114	60 - 140
Tetrachloroethene	2.00	2.28		ppb v/v		114	70 - 130
Toluene	2.00	2.36		ppb v/v		118	70 - 130
trans-1,2-Dichloroethene	2.00	2.19		ppb v/v		110	70 - 130
trans-1,3-Dichloropropene	2.00	2.37		ppb v/v		119	70 - 130
Trichloroethene	2.00	2.12		ppb v/v		106	70 - 130
Trichlorofluoromethane J+ See next page	2.00	2.73		ppb v/v		(136)	60 - 140 70 - 130
Vinyl chloride	2.00	2.29		ppb v/v		115	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	13.2		ug/m3		121	70 - 130
1,1,2,2-Tetrachloroethane	14	15.6		ug/m3		114	70 - 130
1,1,2-Trichloroethane	11	12.2		ug/m3		111	70 - 130
1,1,2-Trichlorotrifluoroethane	15	17.9		ug/m3		117	70 - 130
1,1-Dichloroethane	8.1	8.97		ug/m3		111	70 - 130
1,1-Dichloroethene	7.9	8.69		ug/m3		110	70 - 130
1,2,4-Trichlorobenzene	15	16.3		ug/m3		110	60 - 140
1,2,4-Trimethylbenzene	9.8	11.9		ug/m3		121	70 - 130
1,2-Dibromoethane	15	18.9		ug/m3		123	70 - 130
1,2-Dichlorobenzene	12	15.3		ug/m3		127	70 - 130
1,2-Dichloroethane	8.1	9.72		ug/m3		120	70 - 130
1,2-Dichloropropane	9.2	10.3		ug/m3		112	70 - 130
1,2-Dichlorotetrafluoroethane	14	17.8		ug/m3		127	60 - 140
1,3,5-Trimethylbenzene	9.8	11.1		ug/m3		113	70 - 130
1,3-Dichlorobenzene	12	14.8		ug/m3		123	70 - 130
1,4-Dichlorobenzene	12	14.8		ug/m3		123	70 - 130
1,4-Dioxane	7.2	7.31		ug/m3		101	60 - 140
2,2,4-Trimethylpentane	9.3	10.2		ug/m3		110	70 - 130
2-Butanone	5.9	6.73		ug/m3		114	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	9.49		ug/m3		116	60 - 140
Benzene	6.4	6.76		ug/m3		106	70 - 130
Benzyl chloride J+ (ND) no qual needed	10	13.8	*	ug/m3		(133)	70 - 130
Bromodichloromethane	13	16.1		ug/m3		120	70 - 130
Bromoform	21	23.5		ug/m3		114	60 - 140
Bromomethane	7.8	9.60		ug/m3		124	70 - 130
Carbon tetrachloride	13	15.5		ug/m3		124	70 - 130
Chlorobenzene	9.2	10.4		ug/m3		113	70 - 130
Chloroethane	5.3	6.07		ug/m3		115	70 - 130
Chloroform	9.8	11.2		ug/m3		115	70 - 130
Chloromethane	4.1	4.39		ug/m3		106	60 - 140
cis-1,2-Dichloroethene	7.9	8.72		ug/m3		110	70 - 130
cis-1,3-Dichloropropene	9.1	10.3		ug/m3		113	70 - 130
Cyclohexane	6.9	7.51		ug/m3		109	70 - 130

JM 2/26/17

Method: TO 15 LL - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS) (Continued)

Lab Sample ID: LCS 140-8578/1002
Matrix: Air
Analysis Batch: 8578

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	17	22.2		ug/m3		130	70 - 130
Dichlorodifluoromethane	9.9	10.4		ug/m3		105	60 - 140
Ethanol	19	23.5		ug/m3		125	60 - 140
Ethylbenzene	8.7	9.55		ug/m3		110	70 - 130
Hexachlorobutadiene	21	22.6		ug/m3		106	60 - 140
Hexane	7.0	7.69		ug/m3		109	70 - 130
Methyl tert-butyl ether	7.2	8.49		ug/m3		118	60 - 140
Methylene Chloride	6.9	7.20		ug/m3		104	70 - 130
m-Xylene & p-Xylene	17	19.5		ug/m3		112	70 - 130
o-Xylene	8.7	9.39		ug/m3		108	70 - 130
Styrene	8.5	9.87		ug/m3		116	70 - 130
t-Butyl alcohol	6.1	6.94		ug/m3		114	60 - 140
Tetrachloroethene	14	15.4		ug/m3		114	70 - 130
Toluene	7.5	8.91		ug/m3		118	70 - 130
trans-1,2-Dichloroethene	7.9	8.69		ug/m3		110	70 - 130
trans-1,3-Dichloropropene	9.1	10.8		ug/m3		119	70 - 130
Trichloroethene	11	11.4		ug/m3		106	70 - 130
Trichlorofluoromethane	11	15.3		ug/m3		136	60 - 140
Vinyl chloride	5.1	5.86		ug/m3		115	70 - 130

(J+) all sample result

70-130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		60 - 140

JW 2/16/17

Client Sample ID: HVSVVR008X05XX (Continued)

Lab Sample ID: 140-7080-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	0.62		0.080		ppb v/v	1		TO 15 LL	Total/NA

RPD

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	67		0.44		ug/m3	1		TO 15 LL	Total/NA
1,1,2-Trichlorotrifluoroethane	1.6		0.61		ug/m3	1		TO 15 LL	Total/NA
2-Butanone	98		1.2		0.94	ug/m3	1	TO 15 LL	Total/NA
Chloroform	3.8		0.39		ug/m3	1		TO 15 LL	Total/NA
Chloromethane	0.47		0.41		ug/m3	1		TO 15 LL	Total/NA
Dichlorodifluoromethane	1.1		0.40		ug/m3	1		TO 15 LL	Total/NA
Tetrachloroethene	0.71		0.54		ug/m3	1		TO 15 LL	Total/NA
Trichloroethene	42		0.21		ug/m3	1		TO 15 LL	Total/NA
Trichlorofluoromethane	3.5		0.45		ug/m3	1		TO 15 LL	Total/NA

Client Sample ID: HVSVVR008X05XD

Lab Sample ID: 140-7080-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	12		0.080		ppb v/v	1		TO 15 LL	Total/NA
1,1,2-Trichlorotrifluoroethane	0.21		0.080		ppb v/v	1		TO 15 LL	Total/NA
2-Butanone	1.2		0.32		ppb v/v	1		TO 15 LL	Total/NA
4-Methyl-2-pentanone (MIBK)	0.22		0.20		ppb v/v	1		TO 15 LL	Total/NA
Chloroform	0.78		0.080		ppb v/v	1		TO 15 LL	Total/NA
Dichlorodifluoromethane	0.22		0.080		ppb v/v	1		TO 15 LL	Total/NA
Ethanol	3.9		2.0		ppb v/v	1		TO 15 LL	Total/NA
Methylene Chloride	0.30		0.20		ppb v/v	1		TO 15 LL	Total/NA
Tetrachloroethene	0.12		0.080		ppb v/v	1		TO 15 LL	Total/NA
Trichloroethene	7.7		0.040		ppb v/v	1		TO 15 LL	Total/NA
Trichlorofluoromethane	0.63		0.080		ppb v/v	1		TO 15 LL	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	65		0.44		ug/m3	1		TO 15 LL	Total/NA
1,1,2-Trichlorotrifluoroethane	1.6		0.61		ug/m3	1		TO 15 LL	Total/NA
2-Butanone	3.5		0.94		ug/m3	1		TO 15 LL	Total/NA
4-Methyl-2-pentanone (MIBK)	0.89		0.82		ug/m3	1		TO 15 LL	Total/NA
Chloroform	3.8		0.39		ug/m3	1		TO 15 LL	Total/NA
Dichlorodifluoromethane	1.1		0.40		ug/m3	1		TO 15 LL	Total/NA
Ethanol	7.4		3.8		ug/m3	1		TO 15 LL	Total/NA
Methylene Chloride	1.0		0.69		ug/m3	1		TO 15 LL	Total/NA
Tetrachloroethene	0.80		0.54		ug/m3	1		TO 15 LL	Total/NA
Trichloroethene	42		0.21		ug/m3	1		TO 15 LL	Total/NA
Trichlorofluoromethane	3.5		0.45		ug/m3	1		TO 15 LL	Total/NA

Client Sample ID: HVIAVR010X05XX

Lab Sample ID: 140-7080-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichlorotrifluoroethane	0.087		0.080		ppb v/v	1		TO 15 LL	Total/NA
1,2-Dichloroethane	0.27		0.080		ppb v/v	1		TO 15 LL	Total/NA
1,4-Dioxane	0.38		0.20		ppb v/v	1		TO 15 LL	Total/NA
2-Butanone	0.75		0.32		ppb v/v	1		TO 15 LL	Total/NA
Benzene	0.34		0.080		ppb v/v	1		TO 15 LL	Total/NA
Carbon tetrachloride	0.098		0.040		ppb v/v	1		TO 15 LL	Total/NA
Chloroform	0.21		0.080		ppb v/v	1		TO 15 LL	Total/NA
Chloromethane	0.85		0.20		ppb v/v	1		TO 15 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Sample Calc

TestAmerica Knoxville
Target Compound Quantitation Report

Data File: \\ChromNA\Knoxville\ChromData\MR\20170213-4043.b\RB14P101.D
Lims ID: 140-7080-A-1
Client ID: HVIAMA002X04XX
Sample Type: Client
Inject. Date: 14-Feb-2017 16:39:30 ALS Bottle#: 1 Worklist Smp#: 9
Purge Vol: 500.000 mL Dil. Factor: 1.0000
Sample Info: 140-0004043-009
Misc. Info.: 140-7080-A-1
Operator ID: Instrument ID: MR

Conc TCE = $\frac{13764}{1324861} \times \frac{4}{.3144} = 0.132176$ ppbv

$\times \frac{131.4}{24.45} \frac{ug/m^3}{ppbv}$

$= 0.71 \frac{ug}{m^3}$

Method: \\ChromNA\Knoxville\ChromData\MR\20170213-4043.b\MR_TO15.m
Limit Group: MSA TO14A_15 Routine ICAL
Last Update: 15-Feb-2017 10:55:56 Calib Date: 17-Jan-2017 10:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\RA16IC01R.D

JR 2/26/17

Column 1 : RTX-5 (0.32 mm) Det: MS SCAN
Process Host: XAWRK006

First Level Reviewer: tajh Date: 15-Feb-2017 09:41:06

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	8.231	8.231	0.000	87	269358	4.00	
* 2 1,4-Difluorobenzene	114	10.388	10.393	-0.005	93	1324861	4.00	
* 3 Chlorobenzene-d5 (IS)	117	15.279	15.284	-0.005	85	1060013	4.00	
$ 4 4-Bromofluorobenzene (Surr	95	16.972	16.972	0.000	95	592090	3.57	
8 Dichlorodifluoromethane	85	3.782	3.772	0.010	100	28042	0.2300	
9 Chloromethane	52	3.933	3.923	0.010	99	17940	0.7836	
16 Chloroethane	64	4.537	4.532	0.005	34	1132	0.0437	
17 Ethanol	31	4.672	4.651	0.021	97	4736513	274.9	E
21 Trichlorofluoromethane	101	5.023	5.033	-0.010	98	51687	0.3088	
29 2-Methyl-2-propanol	59	5.761	5.734	0.027	95	12610	0.1265	
30 1,1,2-Trichloro-1,2,2-trif	101	5.799	5.810	-0.011	89	11314	0.0796	
31 Methylene Chloride	84	5.934	5.923	0.011	95	38528	0.5521	
39 2-Butanone (MEK)	72	7.519	7.519	0.000	100	23866	0.7350	
40 Hexane	56	7.611	7.616	-0.005	91	17459	0.3424	
44 Chloroform	83	8.258	8.264	-0.006	90	9481	0.0676	
47 1,1,1-Trichloroethane	97	9.239	9.245	-0.006	94	14350	0.1026	
48 1,2-Dichloroethane	62	9.315	9.315	0.000	73	1759	0.0221	
50 Benzene	78	9.822	9.827	-0.005	95	79800	0.3464	
51 Cyclohexane	69	9.849	9.849	0.000	85	7541	0.2291	
52 Carbon tetrachloride	117	9.860	9.865	-0.005	79	12862	0.0913	
56 Isooctane	57	10.674	10.679	-0.005	90	26625	0.0847	
59 Trichloroethene	130	11.127	11.127	0.000	93	13764	0.1322	
62 1,4-Dioxane	88	11.359	11.343	0.016	83	1998	0.0541	
65 4-Methyl-2-pentanone (MIBK	43	12.340	12.335	0.005	97	23278	0.1497	
68 Toluene	91	13.251	13.257	-0.006	93	634733	2.74	
76 Tetrachloroethene	129	14.443	14.443	0.000	95	10389	0.1168	
79 Ethylbenzene	91	15.646	15.651	-0.005	97	42847	0.1377	
81 m-Xylene & p-Xylene	91	15.818	15.818	0.000	99	107370	0.4594	
85 o-Xylene	91	16.347	16.347	0.000	97	34533	0.1412	
92 1,3,5-Trimethylbenzene	120	17.792	17.792	0.000	93	6674	0.0397	
96 1,2,4-Trimethylbenzene	105	18.255	18.256	-0.001	97	43865	0.1459	

Sample Calc

TestAmerica Knoxville
Target Compound Quantitation Report

Data File: \\ChromNA\Knoxville\ChromData\MR\20170213-4043.b\RB14P101DL.D
Lims ID: 140-7080-A-1
Client ID: HVIAMA002X04XX
Sample Type: Client
Inject. Date: 15-Feb-2017 10:11:30 ALS Bottle#: 1 Worklist Smp#: 26
Purge Vol: 500.000 mL Dil. Factor: 1.0000
Sample Info: 140-0004043-026
Misc. Info.: 140-7080-A-1
Operator ID: Instrument ID: MR

Conc = $\frac{663549}{280983} \times \frac{4.0}{1.2559} \times \frac{500\,mL}{60\,mL}$ ppbv

$\times \frac{46.068}{24.45} \frac{ug/m^3}{ppbv}$

$= 579.59 \frac{ug}{m^3}$

Method: \\ChromNA\Knoxville\ChromData\MR\20170213-4043.b\MR_TO15.m
Limit Group: MSA TO14A_15 Routine ICAL
Last Update: 15-Feb-2017 10:55:56 Calib Date: 17-Jan-2017 10:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\RA16IC01R.D

OK

Column 1 : RTX-5 (0.32 mm) Det: MS SCAN
Process Host: XAWRK006

JH 2/26/17

First Level Reviewer: tajh Date: 15-Feb-2017 10:55:45

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	8.220	8.231	-0.011	88	280983	4.00	
* 2 1,4-Difluorobenzene	114	10.383	10.393	-0.010	93	1354312	4.00	
* 3 Chlorobenzene-d5 (IS)	117	15.279	15.284	-0.005	85	1105914	4.00	
$ 4 4-Bromofluorobenzene (Surr	95	16.972	16.972	0.000	94	680433	3.93	
8 Dichlorodifluoromethane	85	3.777	3.772	0.005	98	8549	0.0672	
9 Chloromethane	52	3.928	3.923	0.005	97	1683	0.0705	
17 Ethanol	31	4.645	4.651	-0.006	100	663549	36.9 ✓	
21 Trichlorofluoromethane	101	5.028	5.033	-0.005	96	7918	0.0453	
29 2-Methyl-2-propanol	59	5.826	5.734	0.092	31	2017	0.0194	
31 Methylene Chloride	84	5.918	5.923	-0.005	96	10951	0.1504	
39 2-Butanone (MEK)	72	7.525	7.519	0.006	99	3308	0.0977	
40 Hexane	56	7.606	7.616	-0.010	86	2158	0.0406	
50 Benzene	78	9.816	9.827	-0.011	96	10313	0.0438	
51 Cyclohexane	69	9.838	9.849	-0.011	80	905	0.0269	
59 Trichloroethene	130	11.105	11.127	-0.022	92	1842	0.0173	
68 Toluene	91	13.251	13.257	-0.006	92	80038	0.3313	
76 Tetrachloroethene	129	14.443	14.443	0.000	92	1564	0.0169	
79 Ethylbenzene	91	15.813	15.651	0.162	91	13311	0.0410	
81 m-Xylene & p-Xylene	91	15.813	15.818	-0.005	98	13311	0.0546	

Reagents:

40MXISSURP_00001 Amount Added: 40.00 Units: mL Run Reagent

AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1 Analy Batch No.: 7852

SDG No.:

Instrument ID: MR GC Column: RTX-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/16/2017 18:15 Calibration End Date: 01/17/2017 10:29 Calibration ID: 857

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 140-7852/24	RA16IC01R.D
Level 2	IC 140-7852/4	RA16IC02.D
Level 3	IC 140-7852/5	RA16IC03.D
Level 4	IC 140-7852/6	RA16IC04.D
Level 5	IC 140-7852/7	RA16IC05.D
Level 6	ICIS 140-7852/8	RA16IC06.D
Level 7	IC 140-7852/9	RA16IC07.D
Level 8	IC 140-7852/10	RA16IC08.D
Level 9	IC 140-7852/11	RA16IC09.D

ANALYTE	RRF LVL 1 / LVL 6	RRF LVL 2 / LVL 7	RRF LVL 3 / LVL 8	RRF LVL 4 / LVL 9	RRF LVL 5	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
Chlorodifluoromethane	+++++	0.2441	0.2289	0.2134	0.2156	Ave		0.2219				4.7		30.0			
	0.2161	0.2201	0.2230	0.2141													
Propene	+++++	1.2246	1.0808	0.9919	1.0336	Ave		1.0402				9.9		30.0			
	1.0755	1.0498	1.0117	0.8540													
Dichlorodifluoromethane	+++++	1.9272	1.8464	1.7140	1.8455	Ave		1.8106				3.7		30.0			
	1.8016	1.8187	1.7431	1.7881													
Chloromethane	+++++	+++++	0.4280	0.3393	0.3620	Ave		0.3400				14.8		30.0			
	0.3330	0.3365	0.3217	0.2593													
1,2-Dichlorotetrafluoroethane	+++++	2.3813	2.3124	2.1620	2.1698	Ave		2.0505				12.5		30.0			
	1.9747	1.9453	1.8494	1.6090													
Acetaldehyde	+++++	+++++	+++++	0.4390	0.3736	Ave		0.3052				28.0		30.0			
	0.2866	0.2755	0.2504	0.2061													
Vinyl chloride	1.0021	1.2091	1.1435	1.1172	1.0767	Ave		0.9750				18.4		30.0			
	0.8866	0.8748	0.7929	0.6718													
1,3-Butadiene	0.8237	0.8413	0.8414	0.7789	0.6918	Ave		0.6890				20.5		30.0			
	0.6260	0.5908	0.5487	0.4583													
Butane	+++++	+++++	1.6540	1.4768	1.3359	Ave		1.2371				22.0		30.0			
	1.1797	1.1260	1.0290	0.8581													
Bromomethane	+++++	1.0396	1.0414	0.9255	0.8817	Ave		0.8530				17.3		30.0			
	0.8112	0.7778	0.7209	0.6263													
Chloroethane	+++++	0.4691	0.4476	0.4046	0.3749	Ave		0.3844				14.9		30.0			
	0.3815	0.3696	0.3378	0.2903													
Ethanol	+++++	0.3207	0.2859	0.2799	0.2722	Ave	✓	0.2559				✓ 17.1		30.0			
	0.2521	0.2389	0.2163	0.1810													
Vinyl bromide	+++++	0.9408	0.8812	0.8575	0.8352	Ave		0.7956				13.3		30.0			
	0.7716	0.7696	0.6992	0.6099													

RRF Ethanol = 0.255875 ✓ %RSD = .043789 / .255875 = 0.1711 x 100 = 17.1 ✓

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

ICAL Calc

[initials] 2/26/17

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1 Analy Batch No.: 7852

SDG No.:

Instrument ID: MR GC Column: RTX-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/16/2017 18:15 Calibration End Date: 01/17/2017 10:29 Calibration ID: 857

ANALYTE	RRF LVL 1 / LVL 6	RRF LVL 2 / LVL 7	RRF LVL 3 / LVL 8	RRF LVL 4 / LVL 9	RRF LVL 5	CURVE TYPE	COEFFICIENT B	COEFFICIENT M1	COEFFICIENT M2	#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
Heptane	+++++	0.2261	0.2226	0.2170	0.2292	Ave		0.2264				5.1		30.0			
	0.2311	0.2368	0.2423	0.2059													
Trichloroethene	0.4212	0.3214	0.2896	0.2949	0.3091	Ave		0.3144				13.2		30.0			
	0.3043	0.3025	0.3028	0.2842													
Dibromomethane	+++++	0.2445	0.2315	0.2259	0.2414	Ave		0.2419				4.1		30.0			
	0.2424	0.2465	0.2585	0.2445													
Bromodichloromethane	0.4769	0.3439	0.3474	0.3472	0.3889	Ave		0.4021				12.2		30.0			
	0.4011	0.4243	0.4496	0.4396													
1,4-Dioxane	0.1619	0.1078	0.1046	0.0980	0.1066	Ave		0.1115				17.4		30.0			
	0.1092	0.1080	0.1095	0.0978													
Methyl methacrylate	+++++	0.2088	0.2060	0.2128	0.2501	Ave		0.2508				14.9		30.0			
	0.2628	0.2897	0.2972	0.2789													
Methylcyclohexane	+++++	0.4415	0.4456	0.4538	0.4721	Ave		0.4619				4.0		30.0			
	0.4739	0.4776	0.4883	0.4420													
4-Methyl-2-pentanone (MIBK)	+++++	0.4096	0.4237	0.4260	0.4674	Ave		0.4695				10.1		30.0			
	0.4864	0.5279	0.5364	0.4785													
cis-1,3-Dichloropropene	0.4244	0.3101	0.2982	0.3035	0.3345	Ave		0.3476				11.8		30.0			
	0.3472	0.3609	0.3771	0.3725													
trans-1,3-Dichloropropene	0.4499	0.2964	0.2973	0.3013	0.3351	Ave		0.3550				15.1		30.0			
	0.3466	0.3728	0.3987	0.3963													
Toluene	+++++	0.8620	0.8516	0.8666	0.8999	Ave		0.8739				2.9		30.0			
	0.8880	0.8943	0.8992	0.8292													
1,1,2-Trichloroethane	0.3817	0.2536	0.2616	0.2616	0.2699	Ave		0.2754				14.8		30.0			
	0.2637	0.2680	0.2711	0.2471													
2-Methylthiophene	+++++	0.7388	0.7323	0.7429	0.7875	Ave		0.7609				3.4		30:0			
	0.7758	0.7838	0.7918	0.7344													
3-Methylthiophene	+++++	0.7225	0.7012	0.7403	0.7828	Ave		0.7494				4.2		30.0			
	0.7617	0.7775	0.7852	0.7242													
2-Hexanone	+++++	+++++	0.1937	0.2255	0.2558	Ave		0.2576				14.3		30.0			
	0.2699	0.2886	0.2996	0.2701													
Dibromochloromethane	0.5793	0.4113	0.4202	0.4316	0.5074	Ave		0.5036				13.5		30.0			
	0.5279	0.5707	0.5782	0.5056													
Octane	0.3472	0.2696	0.2560	0.2625	0.2830	Ave		0.2781				11.9		30.0			
	0.2867	0.2912	0.2834	0.2238													
1,2-Dibromoethane	+++++	0.4402	0.4464	0.4561	0.4980	Ave		0.4814				6.2		30.0			
	0.4967	0.5116	0.5180	0.4839													
Tetrachloroethene	0.4692	0.3324	0.3203	0.3056	0.3348	Ave		0.3356				15.5		30.0			
	0.3215	0.3236	0.3258	0.2873													
Chlorobenzene	+++++	0.7484	0.7374	0.7116	0.7443	Ave		0.7195				4.4		30.0			
	0.7259	0.7230	0.7182	0.6475													

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

RRF_{TCE} = 0.3144 ✓ %RSD = .041486 / .3144 = 13.195 ✓

TRAL Calc

2/26/17

ICAL Calc

Report Date: 17-Jan-2017 14:55:13 Chrom Revision: 2.2 10-Jan-2017 11:26:10

TestAmerica Knoxville
Target Compound Quantitation Report

Data File: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\RA16IC02.D
Lims ID: IC L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 16-Jan-2017 18:15:30 ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 500.000 mL Dil. Factor: 1.0000
Sample Info: 140-0003844-004
Misc. Info.: 073145
Operator ID: Instrument ID: MR
Sublist: chrom-MR_TO15*sub7

$RRF_{Ethanol} = \frac{10913}{347183} \times \frac{4}{.3920} = 0.3207$ ✓

Method: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\MR_TO15.m
Limit Group: MSA TO14A_15 Routine ICAL
Last Update: 17-Jan-2017 14:55:12 Calib Date: 17-Jan-2017 10:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\RA16IC01R.D

JR 2/26/17

Column 1 : RTX-5 (0.32 mm) Det: MS SCAN
Process Host: XAWRK032

First Level Reviewer: barlozhetskayaa Date: 17-Jan-2017 10:11:08

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	8.231	8.242	-0.011	86	347183	4.00	4.00	
* 2 1,4-Difluorobenzene	114	10.399	10.407	-0.008	93	1715283	4.00	4.00	
* 3 Chlorobenzene-d5 (IS)	117	15.290	15.293	-0.003	84	1443170	4.00	4.00	
$ 4 4-Bromofluorobenzene (Surr	95	16.983	16.984	-0.001	95	874628	4.00	3.87	
6 Chlorodifluoromethane	67	3.729	3.724	0.005	96	1661	0.0784	0.0862	
7 Propene	41	3.729	3.728	0.001	65	8333	0.0784	0.0923	
8 Dichlorodifluoromethane	85	3.777	3.776	0.001	99	13114	0.0784	0.0834	
9 Chloromethane	52	3.917	3.923	-0.006	99	3628	0.0784	0.1229	
10 1,2-Dichloro-1,1,2,2-tetra	135	3.950	3.951	-0.001	93	16204	0.0784	0.0910	
11 Acetaldehyde	44	4.068	4.070	-0.002	97	21913	0.3920	0.8272	
12 Vinyl chloride	62	4.074	4.075	-0.001	53	8228	0.0784	0.0972	
13 Butadiene	54	4.155	4.155	0.000	70	5725	0.0784	0.0957	
14 Butane	43	4.160	4.158	0.002	86	11939	0.0784	0.1112	
15 Bromomethane	94	4.413	4.416	-0.003	97	7074	0.0784	0.0955	
16 Chloroethane	64	4.537	4.541	-0.004	95	3192	0.0784	0.0957	
17 Ethanol	31	4.645	4.651	-0.006	97	10913	0.3920	0.4914	
18 Vinyl bromide	106	4.791	4.797	-0.006	96	6402	0.0784	0.0927	
19 2-Methylbutane	43	4.856	4.856	0.000	88	5979	0.0784	0.0919	
20 Acrolein	56	5.034	5.033	0.001	34	2894	0.0784	0.1158	
21 Trichlorofluoromethane	101	5.034	5.036	-0.002	100	17428	0.0784	0.0808	
22 Acetonitrile	40	5.077	5.083	-0.006	99	2648	0.0784	0.0707	
23 Acetone	58	5.136	5.133	0.003	97	10972	0.2352	0.2745	
24 Isopropyl alcohol	45	5.228	5.232	-0.004	82	27997	0.2352	0.2381	
25 Pentane	72	5.238	5.238	0.000	79	1378	0.0784	0.0815	
26 Ethyl ether	31	5.379	5.377	0.002	93	7555	0.0784	0.0770	
27 1,1-Dichloroethene	96	5.627	5.639	-0.012	96	7334	0.0784	0.0767	
28 Acrylonitrile	53	5.708	5.712	-0.004	93	4384	0.0784	0.0715	
29 2-Methyl-2-propanol	59	5.756	5.746	0.010	96	9046	0.0784	0.0704	
30 1,1,2-Trichloro-1,2,2-trif	101	5.815	5.819	-0.004	93	14976	0.0784	0.0817	
31 Methylene Chloride	84	5.918	5.931	-0.013	92	12873	0.0784	0.1431	

IRAL Calc

Report Date: 17-Jan-2017 14:55:13 Chrom Revision: 2.2 10-Jan-2017 11:26:10
Data File: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\RA16IC02.D

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
32 3-Chloro-1-propene	39	5.945	5.952	-0.007	93	4859	0.0784	0.0718	
33 Carbon disulfide	76	6.069	6.072	-0.003	98	18957	0.0784	0.0769	
34 trans-1,2-Dichloroethene	96	6.657	6.667	-0.010	95	7956	0.0784	0.0783	
35 2-Methylpentane	43	6.716	6.719	-0.003	94	14435	0.0784	0.0773	
36 Methyl tert-butyl ether	73	6.813	6.797	0.016	96	15539	0.0784	0.0724	
37 1,1-Dichloroethane	63	7.023	7.035	-0.012	97	11640	0.0784	0.0727	
38 Vinyl acetate	43	7.147	7.147	0.000	99	14770	0.0784	0.0651	
39 2-Butanone (MEK)	72	7.546	7.536	0.010	99	2941	0.0784	0.0703	
40 Hexane	56	7.617	7.622	-0.006	91	5115	0.0784	0.0778	
41 Isopropyl ether	45	7.767	7.761	0.006	95	22365	0.0784	0.0745	
42 cis-1,2-Dichloroethene	96	7.935	7.944	-0.009	83	8025	0.0784	0.0759	
43 Ethyl acetate	43	8.140	8.132	0.008	99	12700	0.0784	0.0665	
44 Chloroform	83	8.264	8.274	-0.010	92	13835	0.0784	0.0766	
45 Tert-butyl ethyl ether	59	8.404	8.396	0.008	94	15317	0.0784	0.0700	
46 Tetrahydrofuran	42	8.657	8.639	0.018	96	7777	0.0784	0.0749	
47 1,1,1-Trichloroethane	97	9.245	9.254	-0.009	95	13066	0.0784	0.0725	
48 1,2-Dichloroethane	62	9.321	9.328	-0.008	94	7562	0.0784	0.0732	
49 n-Butanol	31	9.844	9.825	0.019	66	1785	0.0784	0.0515	
50 Benzene	78	9.833	9.838	-0.005	95	23876	0.0784	0.0800	
51 Cyclohexane	69	9.865	9.866	-0.001	94	3617	0.0784	0.0849	
52 Carbon tetrachloride	117	9.876	9.878	-0.002	89	13402	0.0784	0.0735	
53 2,3-Dimethylpentane	71	10.027	10.026	0.001	90	5190	0.0784	0.0820	
54 Thiophene	84	10.102	10.107	-0.005	95	11576	0.0784	0.0747	
55 Tert-amyl methyl ether	73	10.367	10.361	0.006	70	12468	0.0784	0.0548	
56 Isooctane	57	10.690	10.692	-0.002	98	31423	0.0784	0.0772	
57 1,2-Dichloropropane	63	11.078	11.078	0.000	70	8524	0.0784	0.0827	
58 n-Heptane	71	11.078	11.086	-0.008	86	7601	0.0784	0.0783	
59 Trichloroethene	130	11.138	11.141	-0.003	89	10807	0.0784	0.0801	
60 Dibromomethane	93	11.181	11.186	-0.005	86	8220	0.0784	0.0792	
61 Dichlorobromomethane	83	11.353	11.354	-0.001	97	11561	0.0784	0.0670	
62 1,4-Dioxane	88	11.380	11.365	0.015	77	3625	0.0784	0.0758	
63 Methyl methacrylate	41	11.488	11.488	0.000	87	7020	0.0784	0.0653	
64 Methylcyclohexane	83	11.963	11.963	0.000	95	14844	0.0784	0.0749	
65 4-Methyl-2-pentanone (MIBK	43	12.356	12.355	0.001	95	13772	0.0784	0.0684	
66 cis-1,3-Dichloropropene	75	12.405	12.405	0.000	89	10425	0.0784	0.0699	
67 trans-1,3-Dichloropropene	75	13.122	13.126	-0.004	95	8385	0.0784	0.0655	
68 Toluene	91	13.268	13.269	-0.001	95	24383	0.0784	0.0773	
69 1,1,2-Trichloroethane	83	13.316	13.323	-0.007	91	7172	0.0784	0.0722	
70 2-Methylthiophene	97	13.413	13.417	-0.004	96	20898	0.0784	0.0761	
71 3-Methylthiophene	97	13.624	13.625	-0.001	98	20436	0.0784	0.0756	
72 2-Hexanone	58	13.758	13.752	0.006	88	5156	0.0784	0.0555	
73 Chlorodibromomethane	129	14.039	14.042	-0.003	97	11634	0.0784	0.0640	
74 n-Octane	85	14.060	14.060	0.000	93	7627	0.0784	0.0760	
75 Ethylene Dibromide	107	14.335	14.336	-0.001	96	12452	0.0784	0.0717	
76 Tetrachloroethene	129	14.454	14.456	-0.002	94	9403	0.0784	0.0777	
77 Chlorobenzene	112	15.344	15.342	0.002	96	21168	0.0784	0.0815	
78 2,3-Dimethylheptane	43	15.441	15.444	-0.003	97	21043	0.0784	0.0772	
79 Ethylbenzene	91	15.657	15.660	-0.003	98	29825	0.0784	0.0704	
80 2-Ethylthiophene	97	15.754	15.758	-0.004	97	22501	0.0784	0.0722	
81 m-Xylene & p-Xylene	91	15.829	15.830	-0.001	96	46032	0.1568	0.1447	
82 Bromoform	173	16.234	16.235	-0.001	96	12551	0.0784	0.0537	
83 Styrene	104	16.298	16.296	0.002	96	13707	0.0784	0.0607	

$RRF_{TCE} = \frac{10807}{1715283} \times \frac{4}{.0784} = .3214$ OK JR 2/26/17

CCAL Calc

FORM VII
AIR - GC/MS VOA CONTINUING CALIBRATION DATA

JR 2/16/17

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Lab Sample ID: CCVIS 140-8578/2 Calibration Date: 02/14/2017 12:02

Instrument ID: MR Calib Start Date: 01/16/2017 18:15

GC Column: RTX-5 ID: 0.32(mm) Calib End Date: 01/17/2017 10:29

Lab File ID: RB14CCVa.D Conc. Units: ppb v/v Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorodifluoromethane	Ave	0.2219	0.2900		2.61	2.00	30.7*	30.0
Propene	Ave	1.040	1.074		2.06	2.00	3.2	30.0
Dichlorodifluoromethane	Ave	1.811	1.906		2.11	2.00	5.3	30.0
Chloromethane	Ave	0.3400	0.3618		2.13	2.00	6.4	30.0
1,2-Dichlorotetrafluoroethane	Ave	2.050	2.605		2.54	2.00	27.0	30.0
Acetaldehyde	Ave	0.3052	0.3634		11.9	10.0	19.1	30.0
Vinyl chloride	Ave	0.9750	1.117		2.29	2.00	14.5	30.0
1,3-Butadiene	Ave	0.6890	0.7688		2.23	2.00	11.6	30.0
Butane	Ave	1.237	1.554		2.51	2.00	25.6	30.0
Bromomethane	Ave	0.8530	1.055		2.47	2.00	23.7	30.0
Chloroethane	Ave	0.3844	0.4419		2.30	2.00	14.9	30.0
Ethanol	Ave	0.2559	✓ 0.3191		✓ 12.5	10.0	✓ 24.7	30.0
Vinyl bromide	Ave	0.7956	1.060		2.66	2.00	33.2*	30.0
2-Methylbutane	Ave	0.7496	0.8882		2.37	2.00	18.5	30.0
Acrolein	Ave	0.2879	0.2734		1.90	2.00	-5.0	30.0
Trichlorofluoromethane	Ave	2.486	3.388		2.73	2.00	36.3*	30.0
Acetonitrile	Ave	0.4318	0.4425		2.05	2.00	2.5	30.0
Acetone	Ave	0.4605	0.4777		6.22	6.00	3.7	30.0
Isopropyl alcohol	Ave	1.354	1.459		6.46	6.00	7.7	30.0
Pentane	Ave	0.1947	0.2245		2.31	2.00	15.3	30.0
Ethyl ether	Ave	1.131	1.186		2.10	2.00	4.9	30.0
1,1-Dichloroethene	Ave	1.101	1.206		2.19	2.00	9.5	30.0
Acrylonitrile	Ave	0.7062	0.7761		2.20	2.00	9.9	30.0
t-Butyl alcohol	Ave	1.480	1.695		2.29	2.00	14.5	30.0
1,1,2-Trichlorotrifluoroethane	Ave	2.112	2.466		2.33	2.00	16.7	30.0
Methylene Chloride	Ave	1.036	1.074		2.07	2.00	3.7	30.0
3-Chloropropene	Ave	0.7792	0.9719		2.49	2.00	24.7	30.0
Carbon disulfide	Ave	2.839	3.176		2.24	2.00	11.8	30.0
trans-1,2-Dichloroethene	Ave	1.170	1.282		2.19	2.00	9.5	30.0
2-Methylpentane	Ave	2.152	2.346		2.18	2.00	9.0	30.0
Methyl tert-butyl ether	Ave	2.472	2.912		2.36	2.00	17.8	30.0
1,1-Dichloroethane	Ave	1.844	2.044		2.22	2.00	10.8	30.0
Vinyl acetate	Ave	2.613	2.948		2.26	2.00	12.8	30.0
2-Butanone	Ave	0.4822	0.5500		2.28	2.00	14.1	30.0
Hexane	Ave	0.7573	0.8265		2.18	2.00	9.1	30.0
Isopropyl ether	Ave	3.457	3.877		2.24	2.00	12.1	30.0
cis-1,2-Dichloroethene	Ave	1.219	1.341		2.20	2.00	10.0	30.0
Ethyl acetate	Ave	2.200	2.591		2.36	2.00	17.8	30.0
Chloroform	Ave	2.082	2.393		2.30	2.00	14.9	30.0
Tert-butyl ethyl ether	Ave	2.521	2.906		2.31	2.00	15.3	30.0

CCAL Calc

Report Date: 15-Feb-2017 10:55:57 Chrom Revision: 2.2 03-Feb-2017 15:35:04

TestAmerica Knoxville
Target Compound Quantitation Report

Data File: \\ChromNA\Knoxville\ChromData\MR\20170213-4043.b\RB14CCVa.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 14-Feb-2017 12:02:30 ALS Bottle#: 15 Worklist Smp#: 2
Purge Vol: 500.000 mL Dil. Factor: 1.0000
Sample Info: 140-0004043-002
Misc. Info.: P33
Operator ID: Instrument ID: MR
Sublist: chrom-MR_TO15*sub7
Method: \\ChromNA\Knoxville\ChromData\MR\20170213-4043.b\MR_TO15.m
Limit Group: MSA TO14A_15 Routine ICAL
Last Update: 15-Feb-2017 10:55:56 Calib Date: 17-Jan-2017 10:29:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Knoxville\ChromData\MR\20170116-3844.b\RA16IC01R.D
Column 1 : RTX-5 (0.32 mm) Det: MS SCAN
Process Host: XAWRK006

RRF Ethanol = 255274 / 319976 x 4.0 / 10.0 = 0.319116 ✓

RRF TCE = 266912 / 1604826 x 4.0 / 2.0 = 0.332637 ✓

JM 2/26/17

First Level Reviewer: tajh Date: 14-Feb-2017 15:11:27

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	8.231	8.231	0.000	89	319976	4.00	4.00	
* 2 1,4-Difluorobenzene	114	10.393	10.393	0.000	93	1604826	4.00	4.00	
* 3 Chlorobenzene-d5 (IS)	117	15.284	15.284	0.000	85	1311982	4.00	4.00	
$ 4 4-Bromofluorobenzene (Surr	95	16.972	16.972	0.000	94	776568	4.00	3.78	
6 Chlorodifluoromethane	67	3.718	3.718	0.000	98	46391	2.00	2.61	
7 Propene	41	3.723	3.723	0.000	99	171786	2.00	2.06	
8 Dichlorodifluoromethane	85	3.772	3.772	0.000	99	304966	2.00	2.11	
9 Chloromethane	52	3.923	3.923	0.000	100	57875	2.00	2.13	
10 1,2-Dichloro-1,1,2,2-tetra	135	3.944	3.944	0.000	94	416702	2.00	2.54	
11 Acetaldehyde	44	4.063	4.063	0.000	98	290699	10.0	11.9	
12 Vinyl chloride	62	4.074	4.074	0.000	99	178681	2.00	2.29	
13 Butadiene	54	4.149	4.149	0.000	97	123000	2.00	2.23	
14 Butane	43	4.155	4.155	0.000	93	248594	2.00	2.51	
15 Bromomethane	94	4.413	4.413	0.000	94	168756	2.00	2.47	
16 Chloroethane	64	4.532	4.532	0.000	93	70694	2.00	2.30	
17 Ethanol	31	4.651	4.651	0.000	100	255274	10.0	12.5	
18 Vinyl bromide	106	4.796	4.796	0.000	98	169601	2.00	2.66	
19 2-Methylbutane	43	4.850	4.850	0.000	89	142093	2.00	2.37	
20 Acrolein	56	5.028	5.028	0.000	30	43736	2.00	1.90	
21 Trichlorofluoromethane	101	5.033	5.033	0.000	99	542093	2.00	2.73	
22 Acetonitrile	40	5.077	5.077	0.000	98	70800	2.00	2.05	
23 Acetone	58	5.120	5.120	0.000	98	229279	6.00	6.22	
24 Isopropyl alcohol	45	5.228	5.228	0.000	93	700462	6.00	6.46	
25 Pentane	72	5.233	5.233	0.000	95	35910	2.00	2.31	
26 Ethyl ether	31	5.362	5.362	0.000	94	189815	2.00	2.10	
27 1,1-Dichloroethene	96	5.632	5.632	0.000	98	192991	2.00	2.19	
28 Acrylonitrile	53	5.702	5.702	0.000	94	124163	2.00	2.20	
29 2-Methyl-2-propanol	59	5.734	5.734	0.000	97	271135	2.00	2.29	
30 1,1,2-Trichloro-1,2,2-trif	101	5.810	5.810	0.000	94	394476	2.00	2.33	
31 Methylene Chloride	84	5.923	5.923	0.000	94	171874	2.00	2.07	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAMA002X04XX Lab Sample ID: 140-7080-1

Matrix: Air Lab File ID: RB14P101.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 08:04

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 16:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	0.56		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	0.61		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	0.72		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	2.2		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	1.1		0.26	
100-44-7	Benzyl chloride	126.58	ND	J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.57		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	1.6		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	0.79		0.69	

JR 3/4/17

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAMA002X04XX Lab Sample ID: 140-7080-1

Matrix: Air Lab File ID: RB14P101.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 08:04

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 16:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.1		0.40	
64-17-5	Ethanol	46.07	520	E	3.8	See DL
100-41-4	Ethylbenzene	106.17	0.60		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	1.2		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	1.9		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	2.0		0.35	
95-47-6	o-Xylene	106.17	0.61		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	0.79		0.54	
108-88-3	Toluene	92.14	10		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	0.71		0.21	
75-69-4	Trichlorofluoromethane	137.37	1.7	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	89		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAMA002X04XX DL | Lab Sample ID: 140-7080-1 DL

Matrix: Air | Lab File ID: RB14P101DL.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 08:04

Sample wt/vol: 60(mL) | Date Analyzed: 02/15/2017 10:11

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
64-17-5	Ethanol	46.07	580	D	31	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVMA002X04XX | Lab Sample ID: 140-7080-2

Matrix: Air | Lab File ID: RB14P102.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 08:04

Sample wt/vol: 500(mL) | Date Analyzed: 02/14/2017 17:31

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	47		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	0.99		0.61	
75-34-3	1,1-Dichloroethane	98.96	0.45		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	0.96		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	0.41		0.26	
100-44-7	Benzyl chloride	126.58	ND	J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.31		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	ND		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVMA002X04XX Lab Sample ID: 140-7080-2

Matrix: Air Lab File ID: RB14P102.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 08:04

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 17:31

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.2		0.40	
64-17-5	Ethanol	46.07	40		3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	2.4		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	11		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	0.66		0.35	
95-47-6	o-Xylene	106.17	ND		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	ND		0.54	
108-88-3	Toluene	92.14	2.1		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	52		0.21	
75-69-4	Trichlorofluoromethane	137.37	3.9	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	87		60-140

3/14/17

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVAAVR001X02XX | Lab Sample ID: 140-7080-3

Matrix: Air | Lab File ID: RB14P103.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 08:15

Sample wt/vol: 500(mL) | Date Analyzed: 02/14/2017 18:23

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	ND		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	0.62		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	1.0		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	0.97		0.26	
100-44-7	Benzyl chloride	126.58	ND	J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.55		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	1.2		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVAAVR001X02XX Lab Sample ID: 140-7080-3

Matrix: Air Lab File ID: RB14P103.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 08:15

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 18:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.3		0.40	
64-17-5	Ethanol	46.07	7.2		3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	0.85		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	0.89		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	1.1		0.35	
95-47-6	o-Xylene	106.17	0.38		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	ND		0.54	
108-88-3	Toluene	92.14	2.1		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	ND		0.21	
75-69-4	Trichlorofluoromethane	137.37	1.7	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	89		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAVR008X05XX | Lab Sample ID: 140-7080-4

Matrix: Air | Lab File ID: RB14P104.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 09:00

Sample wt/vol: 500(mL) | Date Analyzed: 02/14/2017 19:17

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	0.45		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	0.61		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	1.2		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	0.84		0.26	
100-44-7	Benzyl chloride	126.58	ND	*5	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.47		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	1.1		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAVR008X05XX Lab Sample ID: 140-7080-4

Matrix: Air Lab File ID: RB14P104.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:00

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 19:17

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.1		0.40	
64-17-5	Ethanol	46.07	56		3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	0.76		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	0.78		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	0.80		0.35	
95-47-6	o-Xylene	106.17	ND		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	ND		0.54	
108-88-3	Toluene	92.14	1.8		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	0.55		0.21	
75-69-4	Trichlorofluoromethane	137.37	1.6	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	88		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR008X05XX | Lab Sample ID: 140-7080-5

Matrix: Air | Lab File ID: RB14P105.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 09:01

Sample wt/vol: 500(mL) | Date Analyzed: 02/14/2017 20:11

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	67		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	1.6		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	1.2	J	0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	ND		0.26	
100-44-7	Benzyl chloride	126.58	ND	J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	ND		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	3.8		0.39	
74-87-3	Chloromethane	50.49	0.47	J	0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR008X05XX Lab Sample ID: 140-7080-5

Matrix: Air Lab File ID: RB14P105.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:01

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 20:11

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.1		0.40	
64-17-5	Ethanol	46.07	ND	J	3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	ND		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	ND	J	0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.35	
95-47-6	o-Xylene	106.17	ND		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	0.71		0.54	
108-88-3	Toluene	92.14	ND		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	42		0.21	
75-69-4	Trichlorofluoromethane	137.37	3.5	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	90		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR008X05XD | Lab Sample ID: 140-7080-6

Matrix: Air | Lab File ID: RB14P106.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 09:01

Sample wt/vol: 500(mL) | Date Analyzed: 02/14/2017 21:03

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	65		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	1.6		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	3.5	J	0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	0.89		0.82	
71-43-2	Benzene	78.11	ND		0.26	
100-44-7	Benzyl chloride	126.58	ND	*J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	ND		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	3.8		0.39	
74-87-3	Chloromethane	50.49	ND	J	0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR008X05XD Lab Sample ID: 140-7080-6

Matrix: Air Lab File ID: RB14P106.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:01

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 21:03

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.1		0.40	
64-17-5	Ethanol	46.07	7.4	J	3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	ND		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	1.0	J	0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.35	
95-47-6	o-Xylene	106.17	ND		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	0.80		0.54	
108-88-3	Toluene	92.14	ND		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	42		0.21	
75-69-4	Trichlorofluoromethane	137.37	3.5	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	89		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAVR010X05XX | Lab Sample ID: 140-7080-7

Matrix: Air | Lab File ID: RB14P107.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 09:41

Sample wt/vol: 500(mL) | Date Analyzed: 02/14/2017 21:55

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8578 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	ND		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	0.66		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	1.1		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	1.4		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	2.2		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	1.1		0.26	
100-44-7	Benzyl chloride	126.58	ND	J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.61		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	1.0		0.39	
74-87-3	Chloromethane	50.49	1.7		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAVR010X05XX Lab Sample ID: 140-7080-7

Matrix: Air Lab File ID: RB14P107.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:41

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 21:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.2		0.40	
~~64-17-5~~	~~Ethanol~~	~~46.07~~	~~260~~	~~E~~	~~3.8~~	See DL
100-41-4	Ethylbenzene	106.17	0.35		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	0.81		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	2.0		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	1.1		0.35	
95-47-6	o-Xylene	106.17	0.39		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	ND		0.54	
108-88-3	Toluene	92.14	3.3		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	0.27		0.21	
75-69-4	Trichlorofluoromethane	137.37	1.8	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	88		60-140

3/14/17

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVIAVR010X05XX DL | Lab Sample ID: 140-7080-7 DL

Matrix: Air | Lab File ID: JB16P103.D

Analysis Method: TO 15 LL | Date Collected: 02/08/2017 09:41

Sample wt/vol: 200(mL) | Date Analyzed: 02/16/2017 18:13

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 8528 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
64-17-5	Ethanol	46.07	150	~~D~~	9.4	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	77		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR010X05XX Lab Sample ID: 140-7080-8

Matrix: Air Lab File ID: RB14P108.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:42

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 22:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
~~71-55-6~~	~~1,1,1-Trichloroethane~~	~~133.41~~	~~94~~	~~E~~	~~0.44~~	See DL
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	2.1		0.61	
75-34-3	1,1-Dichloroethane	98.96	0.62		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.32	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	ND		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	1.5		0.82	
71-43-2	Benzene	78.11	ND		0.26	
100-44-7	Benzyl chloride	126.58	ND	* J	0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	1.1		0.25	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	11		0.39	
74-87-3	Chloromethane	50.49	ND		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.32	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR010X05XX Lab Sample ID: 140-7080-8

Matrix: Air Lab File ID: RB14P108.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:42

Sample wt/vol: 500(mL) Date Analyzed: 02/14/2017 22:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8578 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND	J	0.68	
75-71-8	Dichlorodifluoromethane	120.91	1.1		0.40	
64-17-5	Ethanol	46.07	6.7		3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	ND		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	1.1		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	0.50		0.35	
95-47-6	o-Xylene	106.17	ND		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	ND		0.54	
108-88-3	Toluene	92.14	0.83		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
~~79-01-6~~	~~Trichloroethene~~	~~131.39~~	~~120~~	~~E~~	~~0.21~~	See DL
75-69-4	Trichlorofluoromethane	137.37	4.5	J	0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	88		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-7080-1

SDG No.:

Client Sample ID: HVSVVR010X05XX DL Lab Sample ID: 140-7080-8 DL

Matrix: Air Lab File ID: JB16P104.D

Analysis Method: TO 15 LL Date Collected: 02/08/2017 09:42

Sample wt/vol: 200(mL) Date Analyzed: 02/16/2017 18:59

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 8528 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	67	D	1.1	
79-01-6	Trichloroethene	131.39	100	D	0.54	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	76		60-140

MACTEC

engineering and constructing a better tomorrow

April 23, 2018

Division of Environmental Remediation
Remedial Bureau E, 12th Floor
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7016

Attention: Mr. Michael Mason, Project Manager

Subject: **March 2018 Soil Vapor Intrusion Evaluation Report**
Hidden Valley Electronics Remedial Investigation – Site Number 704029
MACTEC Engineering and Consulting, P.C. Project No. 3612122247

Dear Mr. Mason:

MACTEC Engineering and Consulting, P.C., (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment No. D007619-15) is pleased to present this report documenting the March 2018 soil vapor intrusion (SVI) activities and findings associated with the Hidden Valley Electronics site (Site), NYSDEC Site number 704029. The Site is currently listed by the NYSDEC as a Class 2 site which is defined as a significant threat to the public health or environment.

This SVI evaluation report presents the results of sampling conducted in March 2018 at residential structures. The SVI sampling was accomplished as discussed in the Site Field Activities Plan (MACTEC, 2016). SVI sampling consisted of collecting sub-slab soil vapor, basement air, and outdoor ambient air samples, as well as completing a product inventory and a building questionnaire.

BACKGROUND

The Site is located in the Town of Vestal, Broome County, New York (Figure 1). The Site property was used by a small electronics manufacturer from the late 1950s to the mid-1990s. During that time the use of solvents, including the chlorinated solvents 1,1,1-trichloroethane and trichloroethene, was included in the cleaning process. Solvents and their breakdown products have been detected in groundwater at and downgradient of the Site, including groundwater located in the Twin Orchards neighborhood of Vestal.

Volatile organic compounds (VOCs), including chlorinated solvents, can partition from groundwater to soil vapor and then migrate through the soil column. Soil vapor can then be drawn into buildings through seams and cracks in foundations and floor slabs. The purpose of the SVI sampling is to determine if the VOCs detected in groundwater are partitioning from groundwater to soil vapor and potentially to indoor air (i.e., evaluate the soil vapor intrusion pathway).

MARCH 2018 SOIL VAPOR INTRUSION SAMPLING

The March 2018 SVI sampling was conducted near the Site to evaluate potential for soil vapor intrusion to nearby structures. MACTEC sampled one residential structure (309 Maple Street). Sampling included the collection of one basement indoor air sample, one sub-slab soil vapor sample, and one exterior ambient air sample. The three samples were collected at the residence at 309 Maple Street.

A soil vapor sample was collected from below the concrete slab through a permanent sample point in the basement. A ¼-inch diameter piece of Teflon tubing was inserted in to the 3/8-inch permanent sample port tubing and secured with zip ties. One 60 cubic centimeter volume of air was purged from the tubing with a polyethylene syringe. The syringe was capped and the air released outside the building so as to not interfere with the indoor air sample collection. A 6-liter SUMMA®-type canister with a 24-hour flow valve was connected to the tubing with a 9/16-inch Swagelok fitting, and the sample was collected. Upon completion of the sub-slab sampling, the permanent sample port tubing was curled up and secured within the sample vault.

The indoor air sample was collected over the same 24-hour interval in a 6-liter SUMMA®-type canister from the vicinity of the sub-slab vapor sample collection point. The outdoor ambient air sample was collected over the same 24-hour interval in a 6-liter SUMMA®-type canister outside of the residence at 309 Maple Street.

The soil vapor, indoor air, and ambient air samples were shipped to TestAmerica in Knoxville, Tennessee for analysis of VOCs by United States Environmental Protection Agency Method TO-15.

Table 1 presents identification for the location sampled, including the physical address and sample ID. SVI sample results are presented in Table 2. The Indoor Air Sampling Record, Structure Sampling Questionnaire and Building Inventory, and Photographic Log are provided in Attachment 1. The Data Usability Summary Report and laboratory analytical reports are provided in Attachment 2.

If you have questions or concerns, please feel free to contact us at 207-775-5401.

Sincerely,

MACTEC Engineering and Consulting, P.C.

Rebecca Brosnan

Submitted by:

Rebecca Brosnan

Senior Scientist

Mark Stelmack

Reviewed by:

Mark Stelmack, P.E.

Project Manager

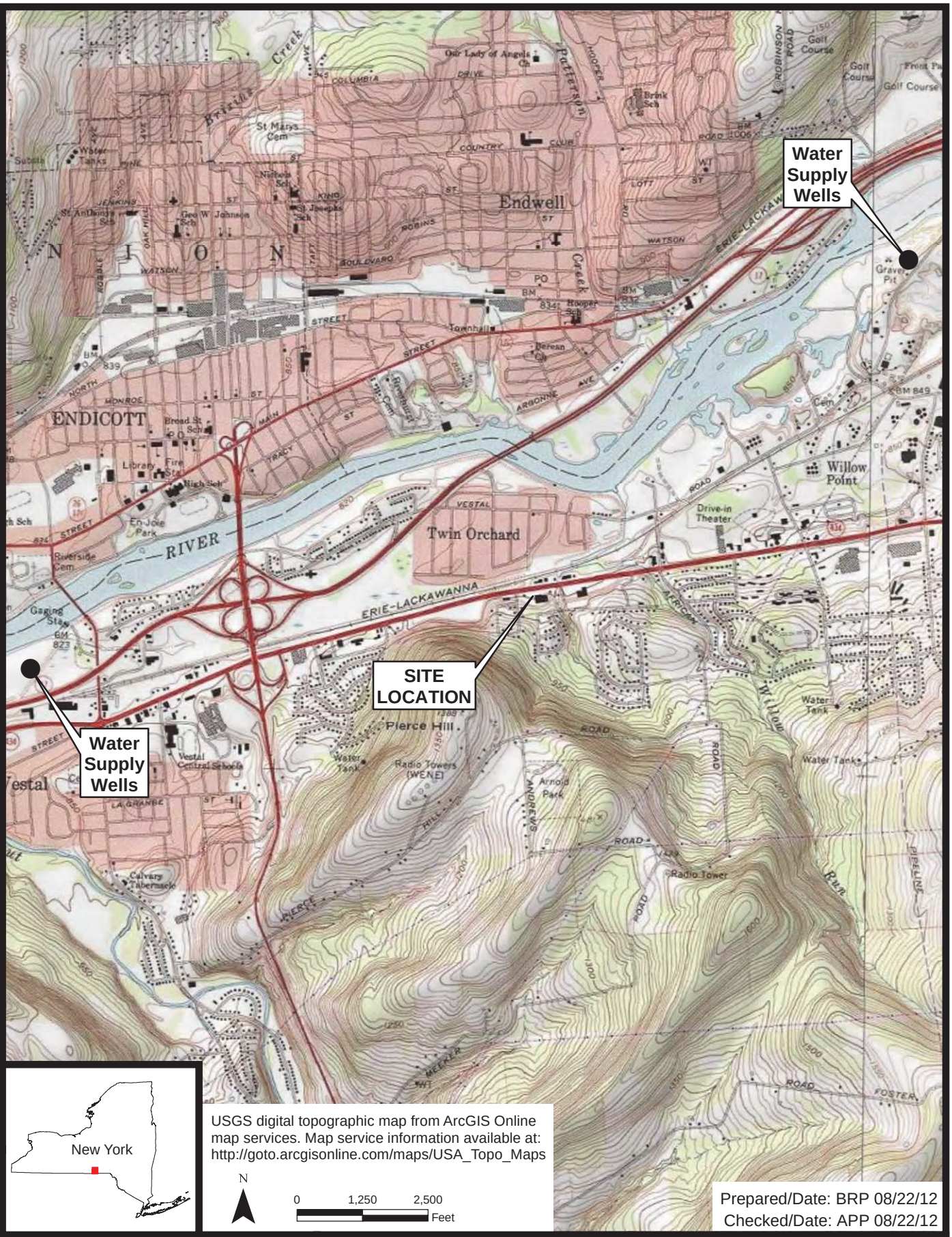
Enclosures (2)

Attachment 1: March 2018 Indoor Air Sampling Records, Structure Sampling Questionnaire and Building Inventory, and Photographic Log

Attachment 2: Data Usability Summary Report and Laboratory Analytical Results

REFERENCES

MACTEC Engineering and Consulting, P.C., 2016. Field Activities Plan: January 2017 Indoor Air Sampling. Prepared for New York State Department of Environmental Conservation, Albany, New York. December 2016.



USGS digital topographic map from ArcGIS Online map services. Map service information available at: http://goto.arcgisonline.com/maps/USA_Topo_Maps

Prepared/Date: BRP 08/22/12
Checked/Date: APP 08/22/12

HIDDEN VALLEY ELECTRONICS SITE

VESTAL, NEW YORK

MACTEC

SITE LOCATION
1808 VESTAL PARKWAY EAST
Project 3612122247 Figure 1

Table 1: Sample Identification and Analyses

Site Type	Media	Site ID	Location ID	Sample ID	VOCs TO15
Residential Sub-slab/Indoor Air					
Residence	Sub-slab	309 Maple Street	SV-MA-002	HV20180306SS	1
Residence	Basement indoor air	309 Maple Street	BA-MA-002	HV20180306IA	1
Outdoor Ambient Air	Outdoor Ambient Air	Outdoor Ambient Air	AA-MA-002	HV20180306BG	1
TOTAL SAMPLES					3

Notes:

Sample ID = 12-digit unique sample identifier.

Volatile organic compounds (VOCs) by USEPA Method TO-15.

Location ID: AA = Ambient Air; BA = Basement Air;
SV = Soil Vapor; MA = Maple Street

1 = number of VOC samples

Table 2: Sub-Slab and Indoor Air Detected VOC Results - March 2018

	Address	Outdoor Ambient Air		309 Maple Street		309 Maple Street	
	Location	AA-MA-002		BA-MA-002		SV-MA-002	
	Sample Date	3/7/2018		3/7/2018		3/7/2018	
	Sample ID	HV20180306BG		HV20180306IA		HV20180306SS	
	Qc Code	FS		FS		FS	
Parameter		Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane		0.44	U	**0.44**		**4.8**	
1,1,2-Trichloro-1,2,2-Trifluoroethane		0.61	U	0.61	U	**1**	
1,2,4-Trimethylbenzene		0.39	U	**0.67**		0.39	U
2-Butanone		0.94	U	**2.2**		**2.5**	
4-Methyl-2-pentanone		0.82	U	**1**		**1.4**	
Benzene		**0.46**		**0.66**		**0.72**	
Carbon tetrachloride		**1**		**0.66**		**0.85**	
Chloromethane		**1.2**		**1.1**		**0.57**	
Dichlorodifluoromethane		**2.8**		**2.5**		**2.9**	
Ethanol		3.8	U	**300**		**150**	
Ethylbenzene		0.35	U	**1.3**		**1**	
Methylene chloride		**0.93**		**1.2**		**1.1**	
t-Butyl alcohol		0.97	U	0.97	U	**3.2**	
Tetrachloroethene		0.54	U	**1.1**		**9.1**	
Toluene		**0.55**		**10**		**8.5**	
Trichloroethene		0.19	U	**0.59**		**0.68**	
Trichlorofluoromethane		**1.5**		**1.4**		**2.4**	
Xylene, o		0.35	U	**1.2**		**0.66**	
Xylenes (m&p)		0.35	U	**4.5**		**2.7**	

Notes:
Samples analyzed for VOCs by USEPA Method TO-15.
Only detected compounds are reported.
Location Name: AA = Ambient Air; SV = Soil Vapor; BA = Basement Air
Results in microgram per cubic meter ($\mu g/m^3$)
QC Code:
FS = Field Sample
Qualifiers:
U = Not detected at a concentration greater than the RL
Detected compounds are indicated in BOLD

ATTACHMENT 1

MARCH 2018 INDOOR AIR SAMPLING RECORD, STRUCTURE SAMPLING QUESTIONNAIRE AND BUILDING INVENTORY, AND PHOTOGRAPHIC LOG

INDOOR AIR SAMPLING RECORD

PROJECT NAME: HIDDEN VALLEY ELECTRONICS
PROJECT NO./TASK NO.: 3612122247.03.****
PROJECT LOCATION: VESTAL, NY
WEATHER CONDITIONS (~~AM~~): START: MOSTLY SUNNY, 29°F
WEATHER CONDITIONS (~~PM~~): END: OVERCAST, 33°F
LOCATION ID: 309 MAPLE
CLIENT: NYSDEC
SAMPLER NAME: ALEX KLEIN / KATIE AMANN
SAMPLER SIGNATURE:
CHECKED BY: K.A
DATE: 3/6/2018
DATE: 3/7/18

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		FIRST FLOOR AIR SAMPLE		AMBIENT AIR SAMPLE	
Flow Regulator Number:	11489	Flow Regulator Number:	10352	Flow Regulator Number:		Flow Regulator Number:	10595
Flow Rate (mL/min):	24 hr	Flow Rate (mL/min):	24 hr	Flow Rate (mL/min):		Flow Rate (mL/min):	24 hr
Canister Serial Number:	10681	Canister Serial Number:	11192	Canister Serial Number:		Canister Serial Number:	10037
Start Date/Time 3/6/18 0927		Start Date/Time 3/6/18 0932		Start Date/Time		Start Date/Time 3/6/18 0900	
Start Pressure ("Hg):	-28	Start Pressure ("Hg):	-28	Start Pressure ("Hg):		Start Pressure ("Hg):	-28
Stop Date/Time 3/7/18 0822		Stop Date/Time 3/7/18 0834		Stop Date/Time		Stop Date/Time 3/7/18 0815	
Stop Pressure ("Hg):	-5	Stop Pressure ("Hg):	-5	Stop Pressure ("Hg):		Stop Pressure ("Hg):	-3
Sample ID: HV20180306SS		Sample ID: HV20180306IA		Sample ID:		Sample ID: HV20180306BG	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	UNfinished	Story/Level:	Basement	Story/Level:		Direction from Building	SE CORNER
Floor Slab Thickness:	~4"	Room:	BASEMENT	Room:		Distance from Building:	~1 ft.
Potential Vapor Entry Points:	DRY WELL FLOOR, WALL CRACKS	Potential Vapor Entry Points:	DRY WELL FLOOR, WALL CRACKS	Potential Vapor Entry Points:		Distance from Roadway:	~40 ft.
Floor Surface:	Concrete	Floor Surface:	CONCRETE	Floor Surface:		Ground Surface:	CONCRETE
Noticable Odor:	NO	Noticable Odor:	NO	Noticable Odor:		Noticable Odor:	NO ODOR
PID Reading (~~ppb~~ ppm):	0.1	PID Reading (~~ppb~~ ppm):	~~0.002~~ 0.02 R	PID Reading (ppb):		PID Reading (~~ppb~~ ppm):	0.0
Intake Depth/Height:	~5"	Intake Height:	5 ft.	Intake Height:		Intake Height above Ground Surface:	~2 ft.
Helium Test Conducted? Breakthrough %:	NA	Indoor Air Temp	65°F	Indoor Air Temp		Intake tubing?	NONE

Comments/Location Sketch:

MACTEC
511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

\\PLD2-FS1\Project\Projects\nysdec1\Contract D007619\Projects\Hidden Valley - RA\3.0_Site_Data\3.2_Field_Notes\2018 SVI\Figure 4.19 Indoor Air Sampling form.xls

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: MATTIOLE RESIDENCE

Address: 309 MAPLE STREET Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: Broome

Contact Information

Preparer's Name: JULIE PALLOZZI Phone No: 207-775-5401

Preparer's Affiliation: AMEC FOSTER WHEELER Company Code:

Purpose of Investigation: SOIL VAPOR INTRUSION Date of Inspection: 3/6/2018

Contact Name: JOHN MATTIOLE Affiliation: OWNER

Phone No: 607-786-0861 Alt. Phone No: 607-723-0839 Email:

Number of Occupants (total): 2 Number of Children: 0

☐ Occupant Interviewed? ☒ Owner Occupied? ☒ Owner Interviewed?

Owner Name (if different): N/A Owner Phone: N/A

Owner Mailing Address: N/A

Building Details

Bldg Type (Res/Com/Ind/Mixed): RESIDENTIAL Bldg Size (S/M/L): S

If Commercial or Industrial Facility, Select Operations:

If Residential Select Structure Type: SINGLE FAMILY RES

Number of Floors: 1+Attic Approx. Year Construction: 1930s ☒ Building Insulated? ☐ Attached Garage?

Describe Overall Building 'Tightness' and Airflows(e.g., results of smoke tests):

Average

Foundation Description

Foundation Type: Concrete Basement Foundation Depth (bgs): ~7 Unit: FEET

Foundation Floor Material: Poured Concrete Foundation Floor Thickness: 4

Foundation Wall Material: Poured Concrete Foundation Wall Thickness: NA Unit: INCHES

☒ Floor penetrations? Describe Floor Penetrations: Drywell drain, sewer, water

☒ Wall penetrations? Describe Wall Penetrations: Utility

Basement is: Dry Basement is: Unfinished ☐ Sumps/Drains? Water In Sump?: NA

Describe Foundation Condition (cracks, seepage, etc.) : Small Cracks

☐ Radon Mitigation System Installed? ☐ VOC Mitigation System Installed? ☐ Mitigation System On?

Heating/Cooling/Ventilation Systems

Heating System: Gas forced hot air / woodstove Heat Fuel Type: Nat Gas ☐ Central A/C Present?

Vented Appliances

Water Heater Fuel Type: Natral Gas Clothes Dryer Fuel Type: Electric

Water Htr Vent Location: External Dryer Vent Location: Upstairs to South

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

PRODUCT INVENTORY

Building Name: MATTIOLE RESIDENCE Bldg Code: Date: 3/6/2018

Bldg Address: 309 MAPLE STREET Apt/Suite No: N/A

Bldg City/State/Zip: VESTAL NY, 13850

Make and Model of PID: ppbRAE 3000 (type), PGM 7340 (model No.), Date of Calibration: 3/6/2018

Location	Product Name/Description	Size (oz)	Condition *	Chemical Ingredients	PID Reading ppm	COC Y/N?
BASEMENT EAST WALL	BLEACH	96 fl oz.	U	SODIUM HYPOCHLORITE 6.0% OTHER INGREDIENTS 94.0%	0.04	N
↓	d-Con/RAT KILLER	12 oz.	U	BRODIFACOUM-3	0.05	
SOUTH WALL	GS 121 GUTTER & SEAM SEALANT	5 fl oz.	U	XYLENE, ETHYLBENZENE	0.05	
WEST WALL	GUTTER SEALER	N/A	U	XYLENE	0.06	
↓	ACRYLIC LATEX CAULK	10.1 fl.oz	U	PHTHALATE ESTERS, ETHYLENE GLYCOL	0.1	
SOUTH WALL STAIRCASE	2 ACRYLIC LATEX CAULK	10.1 fl oz	1. U 2. UO	PHTHALATE ESTERS, ETHYLENE GLYCOL	0.1	
↓	HEAVY DUTY CONSTRUCTION ADHESIVE	10.2 fl.oz	UO	TOLUENE, NAPHTHA, ETHANOL	0.1	
↓	WINDEX	32 fl oz.	U	AMMONIA	0.1	
↓	DECK WASH	1 gal.	U	BLEACHING AGENTS	0.1	
↓	WOOD GLUE	8 fl oz.	U	N/A	0.1	
↓	WOOD PUTTY	3.75 oz.	UO	N/A	0.1	
↓	OLD ENGLISH SCRATCH COVER	8 fl oz.	UO	PETROLEUM DISTILLATES	0.1	
WEST WALL	TURTLE WAX TIRE SHINE	23 fl oz.	U	N/A	0.1	
↓	TURTLE WAX SPRAY WAX	23 fl oz.	U	N/A	0.1	
↓	INTERIOR PROTECTANT (FOR VEHICLE)	16 fl oz	U	N/A	0.1	
↓	CRYLON SPRAY PAINT	11 fl oz.	U	ACETONE, ALIPHATIC HYDROCARBONS, PROPANE, XYLENE, TOLUENE	0.1	

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Product Inventory Complete? Y Were there any elevated PID readings taken on site? N Products with COC?

→

PRODUCT INVENTORY CONTINUED

3/6/2018

Mattiole Residence, 309 Maple St, Vestal, NY 13850

LOCATION	PRODUCT NAME/ DESCRIPTION	SIZE	CONDITION	CHEMICAL INGREDIENTS	PID (ppm)
WEST	PLASTIC WOOD FILLER	4 oz.	U O	~~ACETA~~ ACETONE, N-BUTYL ACETATE ISOPROPYL ALCOHOL	0.1
↓	5 gal. YELLOW CONTAINER	5-gal	N/A-Unknown		
↓	POTTING SOIL CONTAINING FERTILIZER	2 cubic ft 40 lb.	U	CONTENTS UNKNOWN, SEALED SHUT	0.1
↓				TOTAL NITROGEN 0.09% -AMMONIACAL 0.05% -NITRATE 0.04% PHOSPHATE, SOLUBLE POTASH	0.1
NORTH WALL	PIPE COMPOUND (FOR SEALING)	8 fl. oz	U	N/A	
↓	PROPANE	16.4 oz.	U	PROPANE	0.1
↓					0.1
STAIRS	WINDOW CLEANER	64 fl oz	U	AMMONIA	0.01
↓	MIRACLE GRO PLANT FOOD	5 lb	U	NITROGEN, PHOSPHATE, POTASH (SOLUBLE)	0.01
↓	AUTO GLASS CLEANER	22 fl oz	U	N/A	0.01

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Site Name: HIDDEN VALLEY ELECTRONICS Site Code: 704029 Operable Unit:

Building Code: Building Name: MATTIOLE RESIDENCE

Address: 309 MAPLE STREET Apt/Suite No: N/A

City: VESTAL State: NY Zip: 13850 County: BROOME

Factors Affecting Indoor Air Quailty

Frequency Basement/Lowest Level is Occupied?: 1 per week Floor Material: Concrete

[X] Inhabited? [X] HVAC System On? [ ] Bathroom Exhaust Fan? [X] Kitchen Exhaust Fan?

Alternate Heat Source: Wood Stove [ ] Is there smoking in the building?

[ ] Air Fresheners? Description/Location of Air Freshener: NA

[X] Cleaning Products Used Recently?: Description of Cleaning Products: Windex, Form 409

[ ] Cosmetic Products Used Recently?: Description of Cosmetic Products: Upstairs, Bath, Bed

[ ] New Carpet or Furniture? Location of New Carpet/Furniture: NA

[ ] Recent Dry Cleaning? Location of Recently Dry Cleaned Fabrics: NA

[ ] Recent Painting/Staining? Location of New Painting: Patched crack, patched around drydoor/we

[ ] Solvent or Chemical Odors? Describe Odors (if any): No

[ ] Do Any Occupants Use Solvents At Work? If So, List Solvents Used: NO

[ ] Recent Pesticide/Rodenticide? Description of Last Use: No

Describe Any Household Activities (chemical use,/storage, unvented appliances, hobbies, etc.) That May Affect Indoor Air Quality:

Rat poison noted on basement floor

[ ] Any Prior Testing For Radon? If So, When?: No

[X] Any Prior Testing For VOCs? If So, When?: 2/7/17

Sampling Conditions

Weather Conditions: Sun Outdoor Temperature: 23 °F

Current Building Use: Res Barometric Pressure: 29.95 in(hg)

Product Inventory Complete? [X] [X] Building Questionnaire Completed?

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

Building Code: _____ Address: 309 MAPLE STREET N/A VESTAL, NY 13850

Sampling Information

Sampler Name(s): SEE MACTEC FDR Sampler Company Code: _____

Sample Collection Date: _____ Date Samples Sent To Lab: _____

Sample Chain of Custody Number: _____ Outdoor Air Sample Location ID: _____

SUMMA Canister Information

Sample ID:					
Location Code:					
Location Type:					
Canister ID:					
Regulator ID:					
Matrix:					
Sampling Method:					

Sampling Area Info

Slab Thickness (inches):					
Sub-Slab Material:					
Sub-Slab Moisture:					
Seal Type:					
Seal Adequate?:	☐	☐	☐	☐	☐

Sample Times and Vacuum Readings

Sample Start Date/Time:					
Vacuum Gauge Start:					
Sample End Date/Time:					
Vacuum Gauge End:					
Sample Duration (hrs):					
Vacuum Gauge Unit:					

Sample QA/QC Readings

Vapor Port Purge:	☐	☐	☐	☐	☐
Purge PID Reading:					
Purge PID Unit:					
Tracer Test Pass:	☐	☐	☐	☐	☐

Sample start and end times should be entered using the following format: MM/DD/YYYY HH:MM

Structure Sampling Questionnaire and Building Inventory

New York State Department of Environmental Conservation

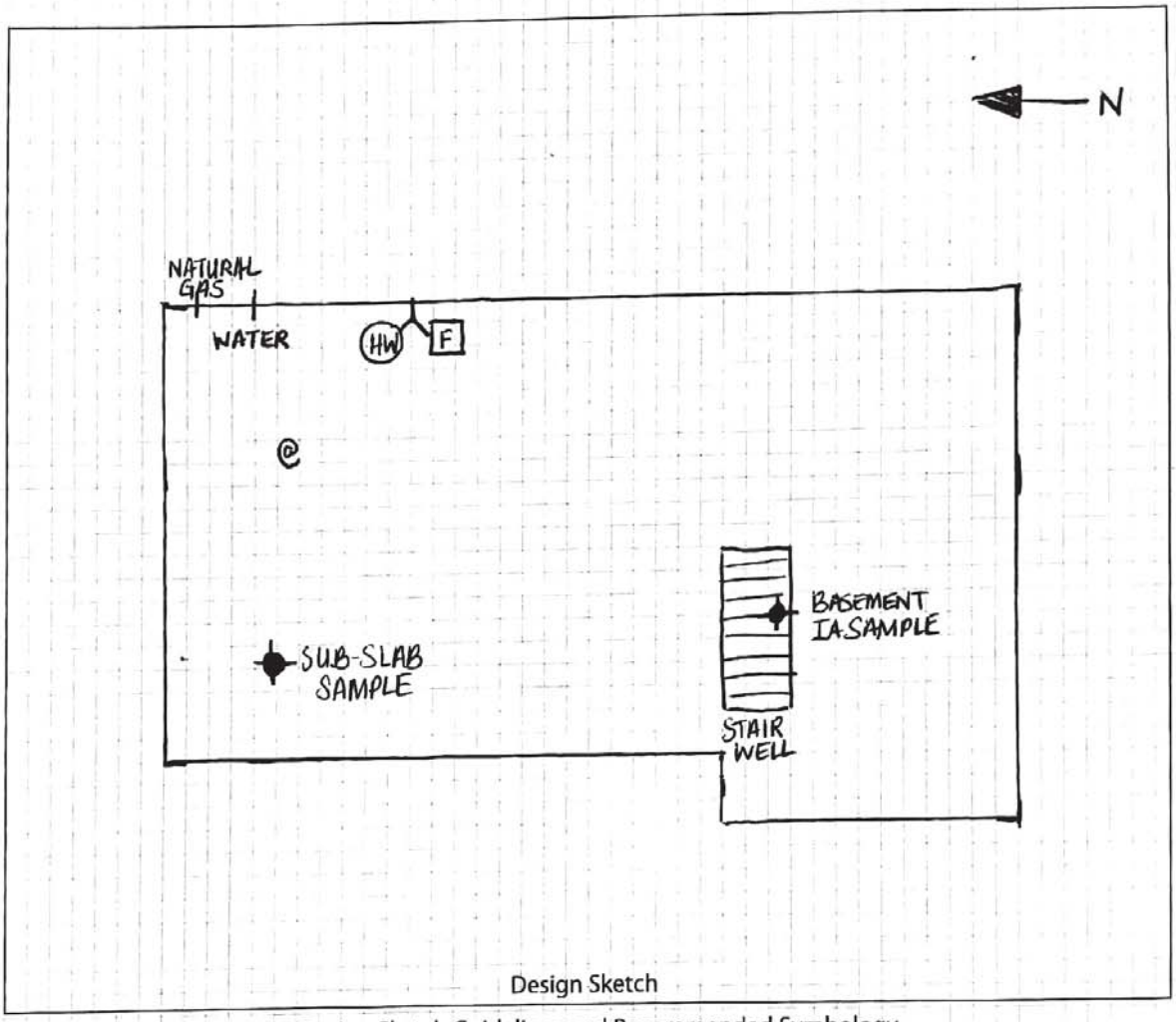
NYSDEC HIDDEN VALLEY
309 Maple St., Vestal, NY

3/6/2018

LOWEST BUILDING LEVEL LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the lowest building level. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketc
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory
New York State Department of Environmental Conservation

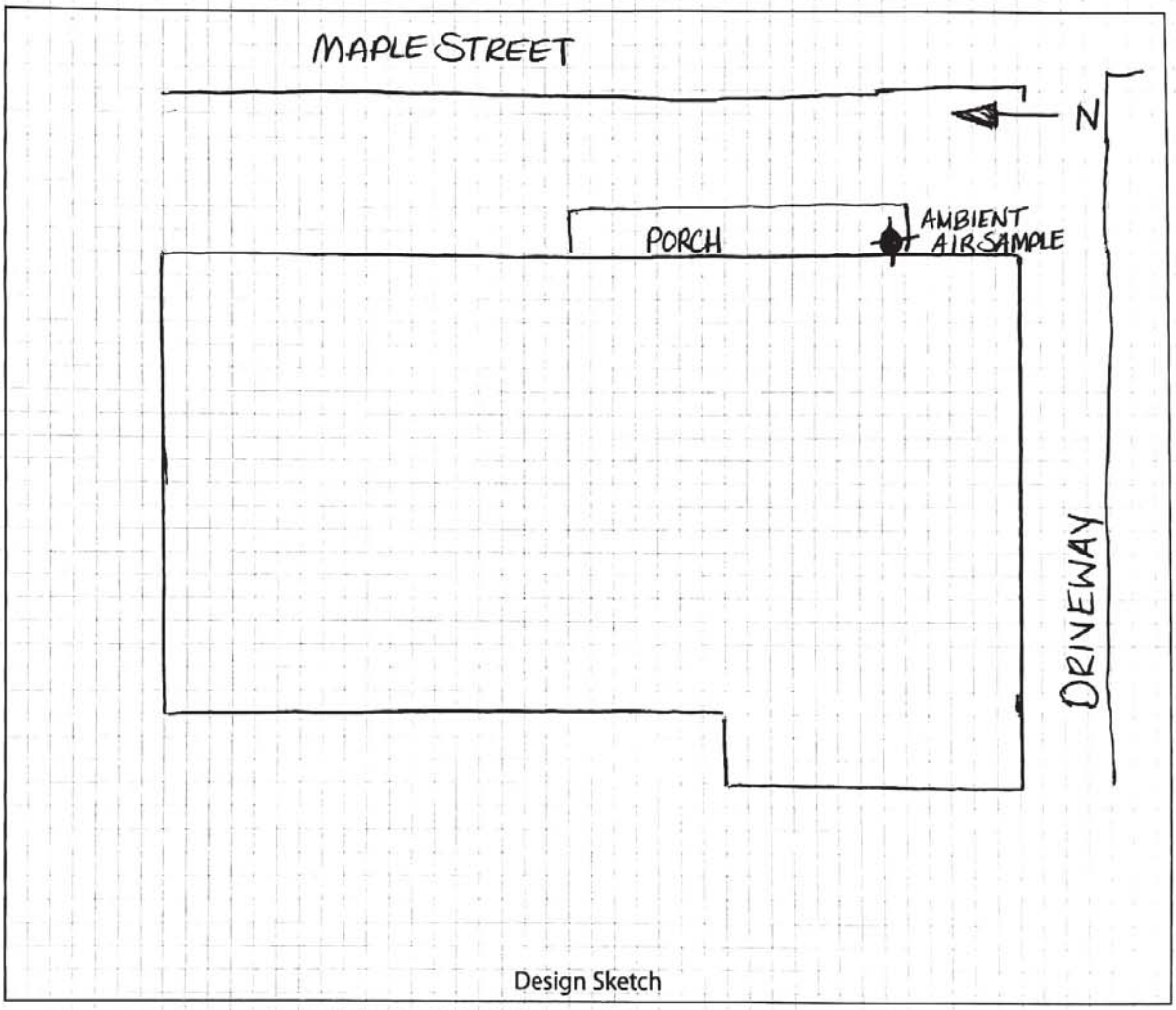
NYSDEC Hidden Valley
309 Maple St., Vestal, NY

3/6/2018

FIRST FLOOR BUILDING LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the first floor of the building. The sketch should be in a standard image format (.jpg, .png, .tiff)

Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

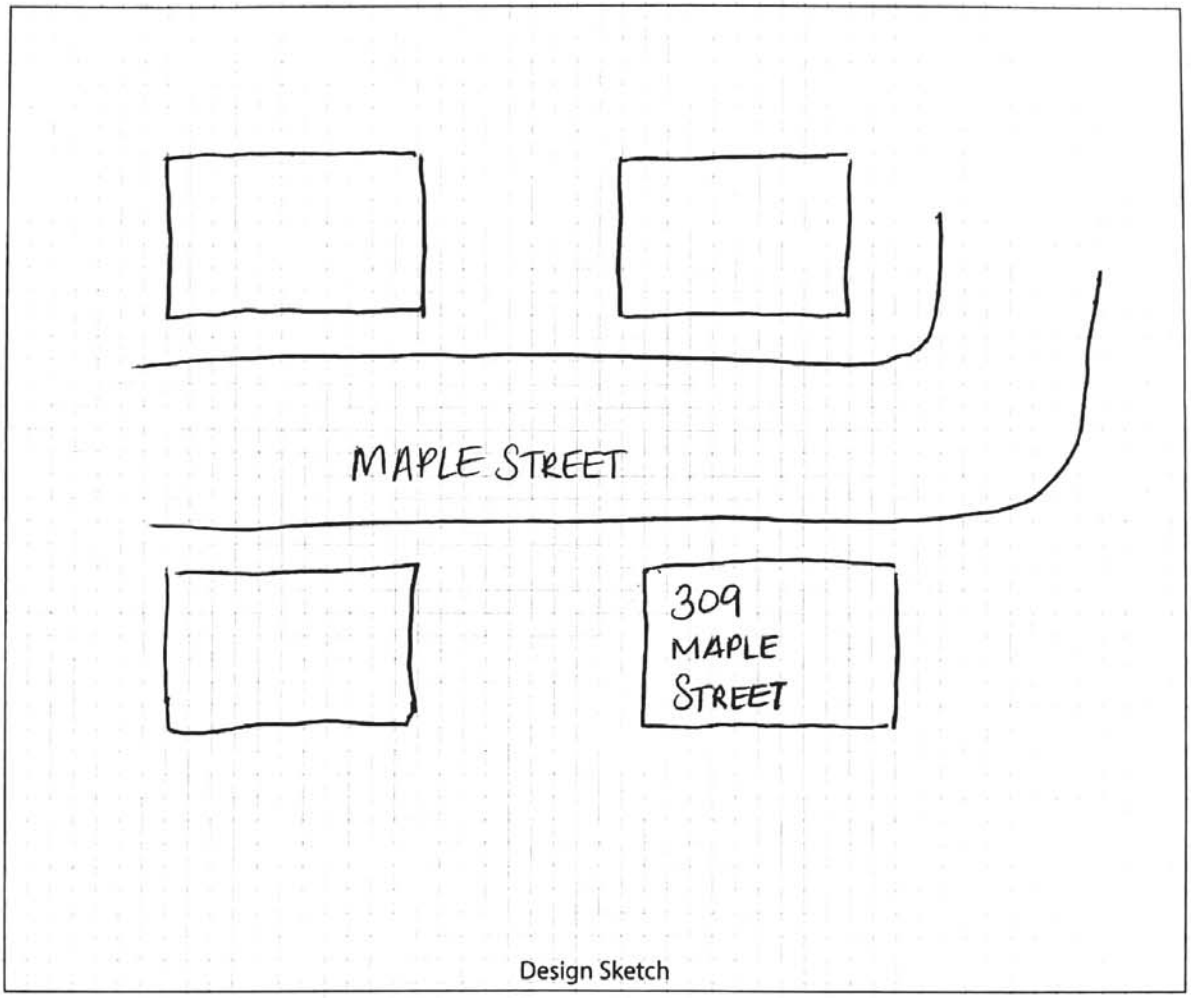
B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	**######**	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling Questionnaire and Building Inventory NYSDEC HIDDEN VALLEY
New York State Department of Environmental Conservation 309 Maple St., Vestal, NY

3/6/2018

OUTDOOR PLOT LAYOUT SKETCH

Please click the box with the blue border below to upload a sketch of the outdoor plot of the building as well as the surrounding area. The sketch should be in a standard image format (.jpg, .png, .tiff) Clear Image



Design Sketch

Design Sketch Guidelines and Recommended Symbology

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sket
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	xxxxxxx	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	######	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: HIDDEN VALLEY ELECTRONICS
PROJECT NUMBER: 3612122247
PROJECT LOCATION: VESTAL, NY
WEATHER CONDITIONS (~~AM~~ Start): MOSTLY CLOUDY SUNNY, 29°F
WEATHER CONDITIONS (~~PM~~ End): SUNNY, 30°F

TASK NO: 03.**** DATE: 3/6/2018
MACTEC CREW: Alex Klein, Katie Amann
SAMPLER NAME: AK / KA
SAMPLER SIGNATURE: KA
CHECKED BY: AK DATE: 3/7/18

MULTI-PARAMETER WATER QUALITY METER

METER TYPE
MODEL NO.
UNIT ID NO.

AM CALIBRATION Start Time _____ /End Time _____

POST CALIBRATION CHECK Start Time _____ /End Time _____

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
pH (4)	SU	4.0		+/- 0.1 pH Units			
pH (7)	SU	7.0		+/- 0.1 pH Units	7.0		+/- 0.3 pH Units
pH (10)	SU	10.0		+/- 0.1 pH Units			
Redox	+/- mV	240		+/- 10 mV	240		+/- 10 mV
Conductivity	mS/cm	1.413		+/- 0.5 % of standard	1.413		+/- 5% of standard
DO (saturated)	%	100		+/- 2% of standard			
DO (saturated)	mg/L [1 (see Chart 1)]			+/- 0.2 mg/L			+/- 0.5 mg/L of standard
DO (<0.1)	mg/L	<0.1		< 0.5 mg/L			
Temperature	°C						
Baro. Press.	mmHg						

TURBIDITY METER

METER TYPE
MODEL NO.
UNIT ID NO.

	Units	Standard Value	Meter Value	Standard Value	Meter Value	*Acceptance Criteria (PM)
10 Standard	NTU	<0.1		10		+/- 0.3 NTU of stan.
20 Standard	NTU	20		20		+/- 5% of standard
100 Standard	NTU	100		100		+/- 5% of standard
800 Standard	NTU	800		800		+/- 5% of standard

PHOTOIONIZATION DETECTOR

METER TYPE ppbRAE
MODEL NO. PGM 7340
UNIT ID NO. 594-903955

	Units	Standard Value	Meter Value	Standard Value	Meter Value	
Background	ppmv	<0.1	0.0	<0.1	0.0	within 5 ppmv of BG
Span Gas	ppmv	~~100~~ 10	10	~~100~~ 10	10	+/- 10% of standard

O_2-LEL 4 GAS METER

METER TYPE
MODEL NO.
UNIT ID NO.

	Units	Standard Value	Meter Value	Standard Value	Meter Value	
Methane	%	50		50		+/- 10% of standard
O_2	%	20.9		20.9		+/- 10% of standard
H_2S	ppmv	25		25		+/- 10% of standard
CO	ppmv	50		50		+/- 10% of standard

OTHER METER

METER TYPE
MODEL NO.
UNIT ID NO.

See Notes Below for Additional Information

☐ Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
☐ Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source: Portland FOS
Lot#/Date Produced:
Trip Blank Source:
Sample Preservatives Source:
Disposable Filter Type: 0.45µm cellulose
Calibration Fluids / Standard Source:
- DO Calibration Fluid (<0.1 mg/L) Portland FOS
- Other
- Other
- Other

	Cal. Standard Lot Number	Exp. Date
pH (4)		
pH (7)		
pH (10)		
ORP		
Conductivity		
10 Turb. Stan.		
20 Turb. Stan.		
100 Turb. Stan.		
800 Turb. Stan.		
PID Span Gas		
O_2-LEL Span Gas		
Other		

NOTES:

* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-FieldCalibrat) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additonal acceptance criteria obtained from instrument specific manufacturer recommendations.
** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-FieldCalibrat), dated 1/19/2010.

MACTEC
511 Congress Street, Portland Maine 04101

FIGURE 6.1
FIELD INSTRUMENT CALIBRATION RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

Attachment 1 – March 2018 SVI - Photographic Log

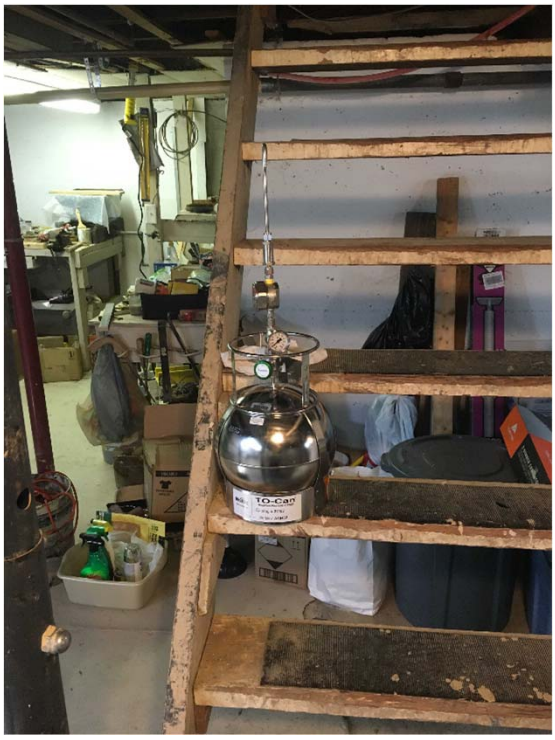
Client: NYSDEC ***Project Number:*** **3612122247.03.******

Site Name: Hidden Valley Electronics ***Site Location:*** Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 1 ***Location:*** 309 Maple St ***Description:*** Sample location: SV-MA-002 Sample ID: HV20180306SS	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 2 ***Location:*** 309 Maple St ***Description:*** Sample Location: SV-MA-002 Sample ID: HV20180306SS	

Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC	***Project Number:*** **3612122247.03.******
Site Name: Hidden Valley Electronics	***Site Location:*** Vestal, New York.

Photographer: Alexander Klein ***Date:*** February, 6 2018 ***Photograph:*** 3 ***Location:*** 309 Maple St ***Description:*** Sample location: BA-MA-002 Sample ID: HV20180306IA	
Photographer: Alexander Klein ***Date:*** February, 6 2018 ***Photograph:*** 4 ***Location:*** 309 Maple St ***Description:*** Sample Location: AA-MA-002 Sample ID: HV20180306BG	

Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC	***Project Number:*** **3612122247.03.******
Site Name: Hidden Valley Electronics	***Site Location:*** Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 5 ***Location:*** 309 Maple St ***Description:*** Basement wall	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 6 ***Location:*** 309 Maple St ***Description:*** Basement floor	

Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC	***Project Number:*** **3612122247.03.******
Site Name: Hidden Valley Electronics	***Site Location:*** Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 7 ***Location:*** 309 Maple St ***Description:*** Basement floor with rat/mice poison	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 8 ***Location:*** 309 Maple St ***Description:*** Basement floor with rat/mice poison	

Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC		***Project Number:***	**3612122247.03.******
Site Name: Hidden Valley Electronics		***Site Location:***	Vestal, New York.
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 9 ***Location:*** 309 Maple St ***Description:*** Basement heating unit			
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 10 ***Location:*** 309 Maple St ***Description:*** Basement water heater			

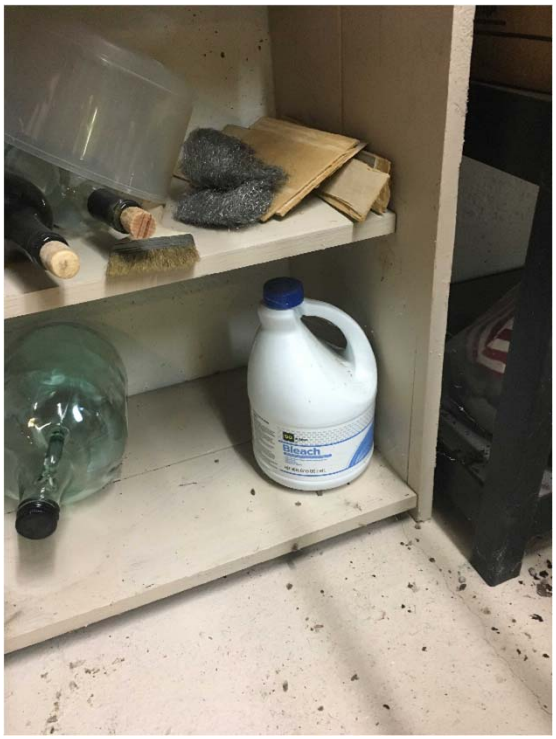
Attachment 1 – March 2018 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 11 ***Location:*** 309 Maple St ***Description:*** Basement floor drain	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 12 ***Location:*** 309 Maple St ***Description:*** Basement wall	

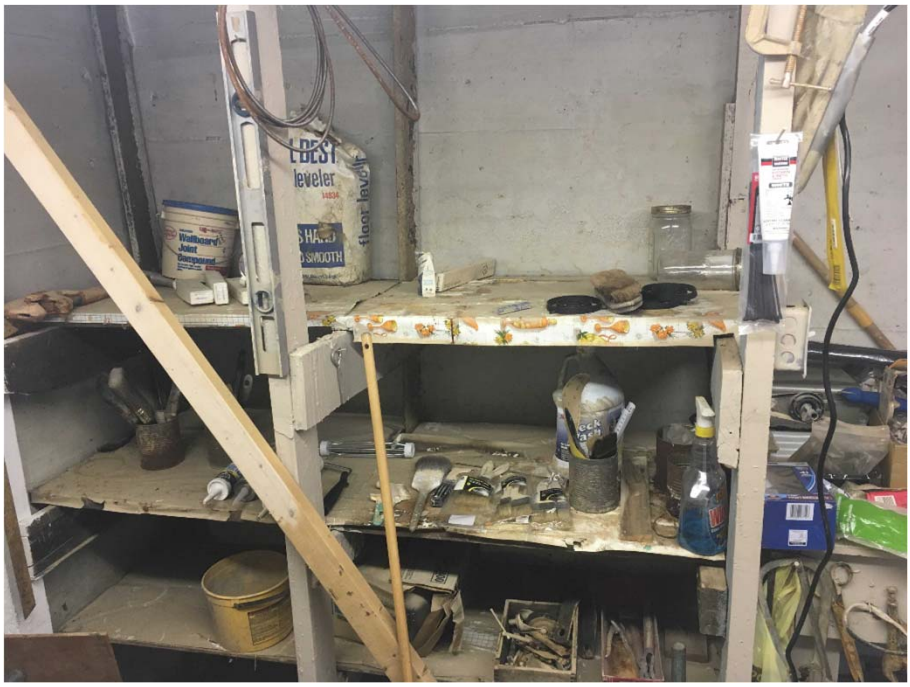
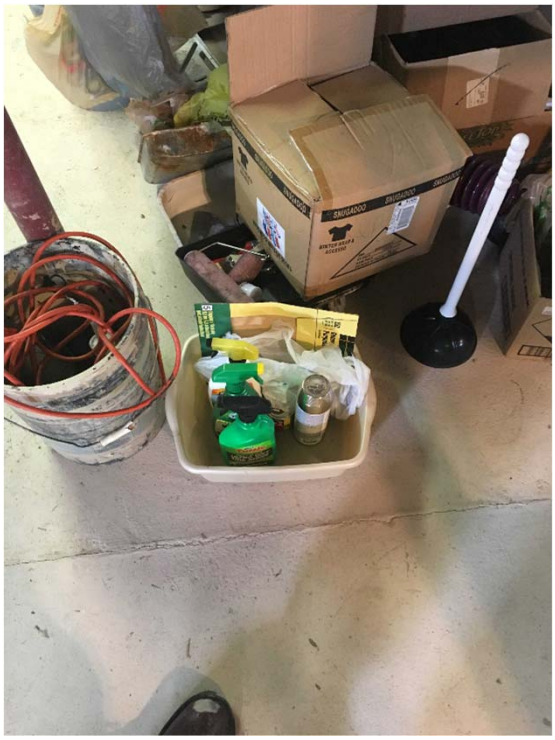
Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC	***Project Number:*** **3612122247.03.******
Site Name: Hidden Valley Electronics	***Site Location:*** Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 13 ***Location:*** 309 Maple St ***Description:*** Basement wall	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 14 ***Location:*** 309 Maple St ***Description:*** Basement bleach	

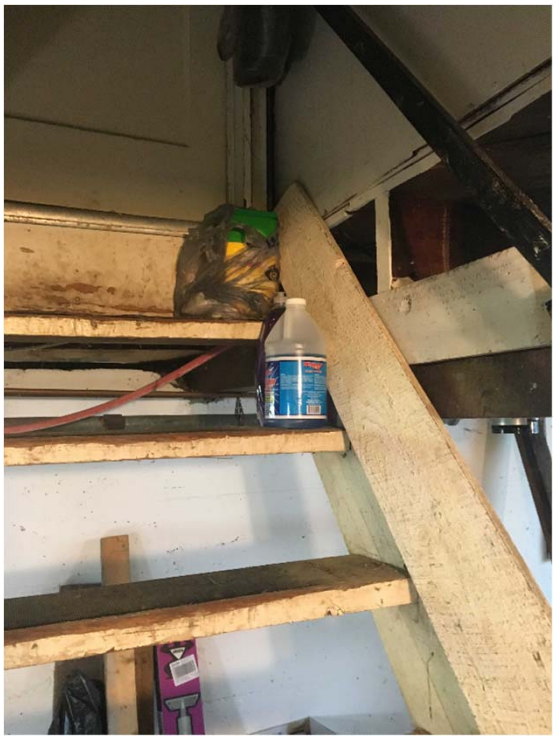
Attachment 1 – March 2018 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 15 ***Location:*** 309 Maple St ***Description:*** Basement shelves	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 16 ***Location:*** 309 Maple St ***Description:*** Basement products	

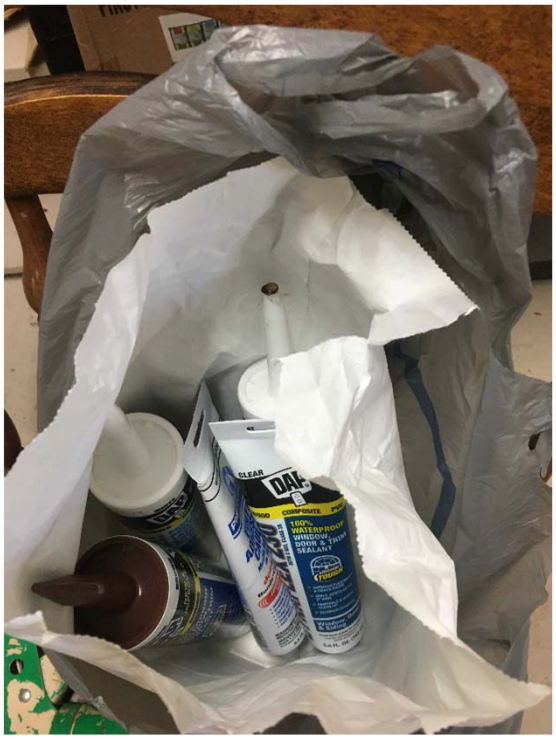
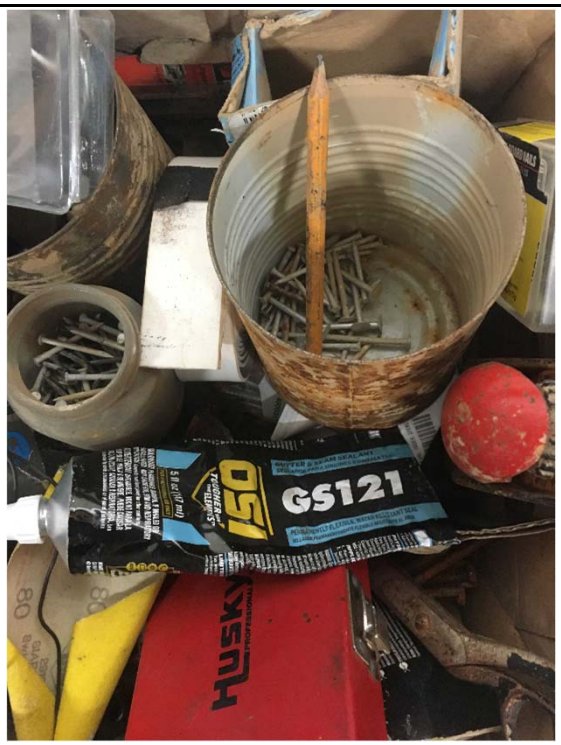
Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC		***Project Number:***	**3612122247.03.******
Site Name: Hidden Valley Electronics		***Site Location:***	Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 17 ***Location:*** 309 Maple St ***Description:*** Basement products	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 18 ***Location:*** 309 Maple St ***Description:*** Basement floor cracks	

Attachment 1 – March 2018 SVI - Photographic Log

Client:	NYSDEC	***Project Number:***	**3612122247.03.******
Site Name:	Hidden Valley Electronics	***Site Location:***	Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 19 ***Location:*** 309 Maple St ***Description:*** Basement products	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 20 ***Location:*** 309 Maple St ***Description:*** Basement products	

Attachment 1 – March 2018 SVI - Photographic Log			
Client: NYSDEC		***Project Number:***	**3612122247.03.******
Site Name: Hidden Valley Electronics		***Site Location:***	Vestal, New York.
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 21 ***Location:*** 309 Maple St ***Description:*** Basement rat/mice poison			
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 22 ***Location:*** 309 Maple St ***Description:*** Basement rat/mice poison			

Attachment 1 – March 2018 SVI - Photographic Log

Client: NYSDEC	***Project Number:*** **3612122247.03.******
Site Name: Hidden Valley Electronics	***Site Location:*** Vestal, New York.

Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 23 ***Location:*** 309 Maple St ***Description:*** Basement wall-mounted gas heater	
Photographer: Alexander Klein ***Date:*** March 6, 2018 ***Photograph:*** 24 ***Location:*** 309 Maple St ***Description:*** Basement fuel canister	

ATTACHMENT 2

DATA USABILITY SUMMARY REPORTS AND LABORATORY ANALYTICAL REPORTS

DATA USABILITY SUMMARY REPORT
MARCH 2018 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

1.0 INTRODUCTION

Soil vapor and air samples were collected at the Hidden Valley Electronics Site (Site) in Vestal, New York, in March 2018 and submitted for off-site laboratory analysis. Samples were analyzed by TestAmerica, Inc., located in Knoxville, Tennessee. Samples were analyzed by the following method:

- Volatile organic compounds (VOCs) by USEPA Method TO-15

Results were reported in the following sample delivery group (SDG):

- 140-10922-1

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results

Laboratory deliverables included:

- Category B deliverable as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations. A table of project control limits is presented in Attachment A. DUSR review checklists and applicable laboratory QC summary forms are included in Attachment B to document DUSR checks and QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Surrogate Spikes (if applicable)
- Field Duplicates (none collected)
- Target Analyte Identification and Quantitation

- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions are applied when necessary based on general procedures in USEPA validation guidelines (USEPA, 2006) and the judgment of the project chemist. The following laboratory or data review qualifiers are used in the final data presentation:

J = concentration is estimated
U = target analyte is not detected above the reported detection limit

Results are interpreted to be usable as reported by the laboratory.

2.0 POTENTIAL DATA LIMITATIONS

Based on the DUSR review the data meet the data quality objectives, and no potential limitations were identified.

3.0 ADDITIONAL QC EXCEEDANCES AND OBSERVATIONS

There were no additional observations or quality control exceedances not specifically addressed above (Section 2.0), and sample results are interpreted to be usable as reported by the laboratory.

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

New York State Department of Environmental Conservation (NYSDEC), 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

USEPA Region 2, 2006. "Validating Volatile Organic Analysis of Ambient Air in Canister by Method TO-15"; SOP # HW-31, Revision 4, Hazardous Waste Support Branch; October 2006.

Data Validator: Julie Ricardi March 9, 2018

Julie Ricardi

Reviewed by: Chris Ricardi, NRCC-EAC March 10, 2018

Chris Ricardi

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
MARCH 2018 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

					Method Class	VOCs
					Analysis Method	TO15
					Fraction	N
SDG	**Location**	**Sample ID**	**Sample Date**	**Media**	**Qc Code**	Count
140-10922-1	AA-MA-002	HV20180306BG	3/7/2018	AIR	FS	52
140-10922-1	BA-MA-002	HV20180306IA	3/7/2018	AIR	FS	52
140-10922-1	SV-MA-002	HV20180306SS	3/7/2018	SV	FS	52

SV = soil vapor
FS = field sample
N = total
VOCs = volatile organic compounds

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
MARCH 2018 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

		SDG	140-10922-1		140-10922-1		140-10922-1	
		Location	AA-MA-002		BA-MA-002		SV-MA-002	
		Sample Date	3/7/2018		3/7/2018		3/7/2018	
		Sample ID	HV20180306BG		HV20180306IA		HV20180306SS	
		Qc Code	FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	1,1,1-Trichloroethane	ug/m3	0.44	U	0.44		4.8	
VOCs	1,1,2,2-Tetrachloroethane	ug/m3	0.55	U	0.55	U	0.55	U
VOCs	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/m3	0.61	U	0.61	U	1	
VOCs	1,1,2-Trichloroethane	ug/m3	0.44	U	0.44	U	0.44	U
VOCs	1,1-Dichloroethane	ug/m3	0.32	U	0.32	U	0.32	U
VOCs	1,1-Dichloroethene	ug/m3	0.16	U	0.16	U	0.16	U
VOCs	1,2,4-Trichlorobenzene	ug/m3	0.59	U	0.59	U	0.59	U
VOCs	1,2,4-Trimethylbenzene	ug/m3	0.39	U	0.67		0.39	U
VOCs	1,2-Dibromoethane	ug/m3	0.61	U	0.61	U	0.61	U
VOCs	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ug/m3	0.56	U	0.56	U	0.56	U
VOCs	1,2-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U
VOCs	1,2-Dichloroethane	ug/m3	0.32	U	0.32	U	0.32	U
VOCs	1,2-Dichloropropane	ug/m3	0.37	U	0.37	U	0.37	U
VOCs	1,3,5-Trimethylbenzene	ug/m3	0.39	U	0.39	U	0.39	U
VOCs	1,3-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U
VOCs	1,4-Dichlorobenzene	ug/m3	0.48	U	0.48	U	0.48	U
VOCs	1,4-Dioxane	ug/m3	0.72	U	0.72	U	0.72	U
VOCs	2-Butanone	ug/m3	0.94	U	2.2		2.5	
VOCs	4-Methyl-2-pentanone	ug/m3	0.82	U	1		1.4	
VOCs	Benzene	ug/m3	0.46		0.66		0.72	
VOCs	Benzyl chloride	ug/m3	0.83	U	0.83	U	0.83	U
VOCs	Bromodichloromethane	ug/m3	0.54	U	0.54	U	0.54	U
VOCs	Bromoform	ug/m3	0.83	U	0.83	U	0.83	U
VOCs	Bromomethane	ug/m3	0.31	U	0.31	U	0.31	U
VOCs	Carbon tetrachloride	ug/m3	1		0.66		0.85	
VOCs	Chlorobenzene	ug/m3	0.37	U	0.37	U	0.37	U
VOCs	Chloroethane	ug/m3	0.21	U	0.21	U	0.21	U
VOCs	Chloroform	ug/m3	0.39	U	0.39	U	0.39	U
VOCs	Chloromethane	ug/m3	1.2		1.1		0.57	
VOCs	Cis-1,2-Dichloroethene	ug/m3	0.16	U	0.16	U	0.16	U
VOCs	Cis-1,3-Dichloropropene	ug/m3	0.36	U	0.36	U	0.36	U
VOCs	Cyclohexane	ug/m3	0.69	U	0.69	U	0.69	U
VOCs	Dibromochloromethane	ug/m3	0.68	U	0.68	U	0.68	U
VOCs	Dichlorodifluoromethane	ug/m3	2.8		2.5		2.9	
VOCs	Ethanol	ug/m3	3.8	U	300		150	
VOCs	Ethylbenzene	ug/m3	0.35	U	1.3		1	
VOCs	Hexachlorobutadiene	ug/m3	0.85	U	0.85	U	0.85	U
VOCs	Hexane	ug/m3	0.7	U	0.7	U	0.7	U
VOCs	Isooctane	ug/m3	0.93	U	0.93	U	0.93	U
VOCs	Methyl Tertbutyl Ether	ug/m3	0.58	U	0.58	U	0.58	U
VOCs	Methylene chloride	ug/m3	0.93		1.2		1.1	
VOCs	Styrene	ug/m3	0.34	U	0.34	U	0.34	U
VOCs	t-Butyl alcohol	ug/m3	0.97	U	0.97	U	3.2	
VOCs	Tetrachloroethene	ug/m3	0.54	U	1.1		9.1	
VOCs	Toluene	ug/m3	0.55		10		8.5	
VOCs	trans-1,2-Dichloroethene	ug/m3	0.32	U	0.32	U	0.32	U
VOCs	trans-1,3-Dichloropropene	ug/m3	0.36	U	0.36	U	0.36	U
VOCs	Trichloroethene	ug/m3	0.19	U	0.59		0.68	
VOCs	Trichlorofluoromethane	ug/m3	1.5		1.4		2.4	
VOCs	Vinyl chloride	ug/m3	0.1	U	0.1	U	0.1	U
VOCs	Xylene, o	ug/m3	0.35	U	1.2		0.66	
VOCs	Xylenes (m&p)	ug/m3	0.35	U	4.5		2.7	

Method TO-15
ug/m3 = microgram per cubic meter
U = not detected
J = estimated value

Prepared by: BJS 4/9/18
Checked by: JAR 4/9/18

ATTACHMENT A
SUMMARY OF QC LIMITS

PARAMETER	QC TEST	ANALYTE	Air (%R)
Volatiles	Surrogate	All Surrogate Compounds	Lab Limits
	LCS	All Target Compounds	70 - 130

Notes:
LCS - Laboratory Control Sample
%R = percent recovery
QC Limits are based on USEPA Region II Data Validation Guidelines and Project QA/QC Objectives

DATA USABILITY SUMMARY REPORT
MARCH 2018 SOIL VAPOR AND AIR SAMPLING EVENT
HIDDEN VALLEY ELECTRONICS SITE
VESTAL, NEW YORK

ATTACHMENT B

No Quals

VOCs in Air

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project:
Method : TO-15
Laboratory and SDG(s): TAL Knox **SDG#** 140-10922-1
Date: 4/9/18
Reviewer: Julie Ricardi
Review Level [X] NYSDEC DUSR USEPA Region II Guideline

Control limits are from EPA Region 2 - SOP# HW-31, October 2006.

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? No problems noted
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)
2. ☑ **Holding time and Sample Collection**
   Were samples analyzed within the 30 day holding time? (YES) NO (circle one)
3. ☑ **QC Blanks** (use 5x rule for calculating action levels)
   Are method blanks free of contamination? (YES) NO (circle one)
4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES (NO) (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed
5. ☑ **Instrument Calibration - Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within method criteria (%RSD ≤30; %D ≤30) in the initial calibration and/or continuing calibration standards? YES (NO)

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES (NO) NA
   If yes to above, use professional judgment to evaluate data and qualify results if needed
6. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = +40% to -40%, RTs within 20 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES (NO) (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES (NO) NA
   If yes to above, use professional judgment to evaluate data and qualify results if needed
7. ☑ **Surrogate Recovery**

   Were all results within laboratory limits? (YES) NO (circle one)
8. ☑ **Field Duplicates**
   Were Field Duplicates submitted/analyzed? YES (NO)

   Were all results were within criteria (Field Dup RPD goal = 50). YES NO (NA) (circle one)
9. ☑ **Laboratory Control Sample Results** (limits 70-130%)

   Were all results within limits? (YES) NO (circle one)
10. ☑ **Raw Data Review and Calculation Checks**
    See attached

11. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? (YES) NO (circle one)

12. ☑ **Tables Review**

Table 1 (Samples and Analytical Methods) ✓

Table 2 (Analytical Results) ✓

Table 3 (Qualification Actions) N/A

Were all tables produced and reviewed? (YES) NO (circle one)

Table 4 (TICs) Did lab report TICs? YES (NO) (circle one)

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	**Project Manager:** MARK STELMACK	**Sampled By:** ALEX KLEIN	1 of 1 COCs
Company: Amec Foster Wheeler	**Phone:** (207) 775-5401		
Address: 511 CONGRESS ST., SUITE 200	**Site Contact:**		
City/State/Zip PORTLAND, ME 04101	**TAL Contact:** JAMIE MCKINNEY		
Phone: (207) 775-5401			
FAX:			
Project Name: HIDDEN VALLEY	**Analysis Turnaround Time**		
Site/location: VESTAL, NY	Standard (Specify) 2 WEEKS		
PO # CALLOUT AGREEMENT #120832	Rush (Specify)		

140-10922 Chain of Custody

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Matrix	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
HV20180306BG	3/7/18	3/6/18 0900	0815	-28	-3	10595	10037	X								X			
HV20180306SS	3/7/18	3/6/18 0927	0822	-28	-5	11489	10681	X									X		
HV20180306IA	3/7/18	3/6/18 0932	0824	-28	-5	10352	11192	X							X				

Sampled by :

Temperature (Fahrenheit)	Interior	Ambient
Start	65°F	29°F
Stop	64°F	34°F

Pressure (inches of Hg)	Interior	Ambient
Start	UNKNOWN	29.95
Stop	UNKNOWN	29.70

Received @ ambient
1 box, FedEx Ground
trk# 7899 2560 0947

No custody seal
KW 3/9/18

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: Alex Klein	**Date/Time:** 3/7/18 0930	**Canisters Received by:**	
Samples Relinquished by:	**Date/Time:** 3/7/18 0930	**Received by:**	3/9/18 1310
Relinquished by:	**Date/Time:**	**Received by:**	

3 can, 3 flow
JCC

TestAmerica Knoxville - Air Canister Initial Pressure Check

Gauge ID: G5
Date: 3/10/2018

Analyst	Sample ID	Asset #	Cleaning Job	Cert	Size (L)	Pressure @ Receipt (-in Hg or +psig)	Time	Comments
afb	140-10922-A-1	10037	10717	b	6	-2.4 ✓	1430	
afb	140-10922-A-2	10681	10717	b	6	-4.6 ✓	1431	
afb	140-10922-A-3	11192	10717	b	6	-4.9 ✓	1432	

4/8/18

 Sample Calc

TestAmerica Knoxville
Target Compound Quantitation Report

Data File: \\ChromNA\Knoxville\ChromData\MJ\20180309-7609.b\JC12p109.D
Lims ID: 140-10922-A-2
Client ID: HV20180306SS
Sample Type: Client
Inject. Date: 13-Mar-2018 00:17:30 ALS Bottle#: 9 Worklist Smp#: 18
Purge Vol: 500.000 mL Dil. Factor: 1.0000
Sample Info: 140-0007609-018
Misc. Info.: 140-10922-A-2
Operator ID: 403648 Instrument ID: MJ

Conc Ethanol = $\frac{2589523}{178626} \times \frac{4.0}{.4846} = 119.7$ OK

(diluted for gr reporting) 4/9/18

Method: \\ChromNA\Knoxville\ChromData\MJ\20180309-7609.b\MJ_TO15.m
Limit Group: MSA TO14A_15 Routine ICAL
Last Update: 13-Mar-2018 12:46:09 Calib Date: 15-Feb-2018 22:24:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Knoxville\ChromData\MJ\20180215-7391.b\JB15ICL10.D

Column 1 : RTX-5 (0.32 mm) Det: MS SCAN
Process Host: XAWRK003

Conc TCE = $\frac{10385}{1055939} \times \frac{4}{.3129} = 0.1257$ ppbv $\times \frac{131.4 \text{ ug/m}^3}{24.45 \text{ ppbv}} = 0.676$ ug/m³

First Level Reviewer: barlozhetskayaa Date: 13-Mar-2018 13:29:04

OK

gr 4/9/18

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	9.675	9.678	-0.003	91	178626	4.00	
* 2 1,4-Difluorobenzene	114	11.773	11.781	-0.008	95	1055939	4.00	
* 3 Chlorobenzene-d5 (IS)	117	16.373	16.381	-0.008	88	980196	4.00	
$ 4 4-Bromofluorobenzene (Surr	95	17.981	17.980	-0.003	96	699221	3.95	
8 Dichlorodifluoromethane	85	4.264	4.272	-0.008	100	92371	0.5765	
9 Chloromethane	52	4.473	4.480	-0.009	98	5133	0.2737	
10 1,2-Dichloro-1,1,2,2-tetra	135	4.484	4.485	-0.003	54	1912	0.0182	
17 Ethanol	31	5.442	5.426	0.014	97	2589523	119.7 ✓	E
20 Trichlorofluoromethane	101	5.921	5.929	-0.008	99	67224	0.4337	
30 2-Methyl-2-propanol	59	7.002	6.819	0.180	93	72187	1.06	
29 1,1,2-Trichloro-1,2,2-trif	101	6.862	6.868	-0.008	96	15925	0.1300	
32 Methylene Chloride	84	7.050	7.051	-0.003	94	19510	0.3049	
37 1,1-Dichloroethane	63	8.331	8.330	-0.002	93	8555	0.0770	
40 2-Butanone (MEK)	72	8.890	8.900	-0.013	94	19471	0.8527	
39 Hexane	56	8.895	8.911	-0.019	56	8928	0.1858	
44 Chloroform	83	9.681	9.688	-0.008	36	6498	0.0508	
47 1,1,1-Trichloroethane	97	10.703	10.707	-0.008	96	117089	0.8792	
49 Cyclohexane	69	11.262	11.268	-0.014	51	2565	0.0829	
50 Benzene	78	11.273	11.274	-0.008	97	42267	0.2255	
52 Carbon tetrachloride	117	11.295	11.289	-0.002	97	19189	0.1356	
56 Isooctane	57	11.972	11.977	-0.014	95	16791	0.0559	
59 Trichloroethene	130	12.462	12.462	-0.008	96	10385	0.1257 ✓	
65 4-Methyl-2-pentanone (MIBK	43	13.586	13.584	-0.008	98	32592	0.3367	
68 Toluene	91	14.442	14.447	-0.008	94	468564	2.27	
76 Tetrachloroethene	129	15.561	15.560	-0.002	95	109942	1.34	
79 Ethylbenzene	91	16.696	16.700	-0.008	99	59404	0.2317	
81 m-Xylene & p-Xylene	91	16.846	16.856	-0.014	100	120642	0.6285	
85 o-Xylene	91	17.373	17.378	-0.009	99	30928	0.1519	

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-10922-1 Analy Batch No.: 18185

SDG No.:

Instrument ID: MJ GC Column: RTX-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/15/2018 15:35 Calibration End Date: 02/15/2018 22:24 Calibration ID: 1394

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 140-18185/3	JB15ICL01.D
Level 2	IC 140-18185/4	JB15ICL02.D
Level 3	IC 140-18185/5	JB15ICL03.D
Level 4	IC 140-18185/6	JB15ICL04.D
Level 5	IC 140-18185/7	JB15ICL05.D
Level 6	IC 140-18185/8	JB15ICL06.D
Level 7	ICIS 140-18185/9	JB15ICISL07.D
Level 8	IC 140-18185/10	JB15ICL08.D
Level 9	IC 140-18185/11	JB15ICL09.D
Level 10	IC 140-18185/12	JB15ICL10.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
Chlorodifluoromethane	+++++ 0.3914	+++++ 0.3824	0.6302 0.3743	0.4722 0.3630	0.4279 0.3774	Ave		0.4274				20.9		30.0			
Propene	+++++ 1.1645	+++++ 1.1300	1.3108 1.1715	1.1837 1.0943	1.1738 1.0836	Ave		1.1640				6.0		30.0			
Dichlorodifluoromethane	3.3176 3.5951	3.3925 3.7021	3.7269 3.7985	3.5660 3.4882	3.7705 3.5233	Ave		3.5881				4.5		30.0			
Chloromethane	+++++ 0.4205	+++++ 0.4168	+++++ 0.4071	0.4724 0.3864	0.4596 0.3768	Ave		0.4199				8.4		30.0			
1,2-Dichlorotetrafluoroethane	2.1309 2.3962	2.1623 2.4267	2.4453 2.3778	2.3770 2.3294	2.5632 2.3092	Ave		2.3518				5.5		30.0			
Vinyl chloride	0.9082 1.3858	1.0603 1.4136	1.4400 1.3859	1.3679 1.3144	1.4774 1.3153	Ave		1.3069				13.8		30.0			
1,3-Butadiene	+++++ 1.0489	+++++ 1.0425	1.1500 1.0266	1.1067 0.9909	1.1086 0.9783	Ave		1.0566				5.7		30.0			
Butane	+++++ 1.9486	+++++ 2.0128	2.2836 1.9906	1.9974 1.8616	2.0933 1.8465	Ave		2.0043				6.9		30.0			
Bromomethane	1.1032 1.3116	1.2081 1.3214	1.4474 1.3073	1.3410 1.2837	1.3831 1.3116	Ave		1.3018				7.2		30.0			
Chloroethane	+++++ 0.6702	0.6755 0.6774	0.6991 0.6771	0.6748 0.6561	0.7002 0.6756	Ave		0.6785				2.0		30.0			
Ethanol	+++++ 0.4776	+++++ 0.4727	+++++ 0.5295	0.5377 0.4327	0.5682 0.3737	Ave	✓	0.4846			✓	13.8		30.0			
Vinyl bromide	+++++ 1.2267	1.1089 1.2671	1.2671 1.2513	1.2154 1.2222	1.3143 1.2605	Ave		1.2371				4.6		30.0			
2-Methylbutane	+++++ 1.4324	+++++ 1.5281	+++++ 1.4517	1.4899 1.3965	1.6262 1.4156	Ave		1.4772				5.4		30.0			

IC4L Calc

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

$\bar{X}$ Ethanol = 0.48458 %RSD = .06709 / .48458 = 13.8 OK

OK

FORM VI
AIR - GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Knoxville Job No.: 140-10922-1 Analy Batch No.: 18185

SDG No.:

Instrument ID: MJ GC Column: RTX-5 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/15/2018 15:35 Calibration End Date: 02/15/2018 22:24 Calibration ID: 1394

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
Hexane	+++++ 1.0408	+++++ 1.0483	+++++ 1.0588	1.1864 0.9999	1.2001 0.9988	Ave		1.0762				7.7		30.0			
cis-1,2-Dichloroethene	1.2882 1.2837	1.3496 1.3287	1.4225 1.3828	1.3669 1.3054	1.4552 1.3322	Ave		1.3515				4.2		30.0			
Ethyl acetate	+++++ 1.9979	+++++ 2.0327	+++++ 2.5317	2.6021 1.9919	2.7194 1.9525	Ave		2.2612				15.0		30.0			
Chloroform	+++++ 2.6905	+++++ 2.7674	3.1390 2.8838	2.9415 2.6905	3.0730 2.7342	Ave		2.8650				6.1		30.0			
Tetrahydrofuran	+++++ 1.0858	+++++ 1.1302	+++++ 1.2587	1.4360 1.0849	1.4535 1.0393	Ave		1.2126				14.3		30.0			
1,1,1-Trichloroethane	3.0053 2.7843	3.1296 2.9030	3.1969 2.9798	2.9529 2.8232	3.1866 2.8621	Ave		2.9824				5.0		30.0			
1,2-Dichloroethane	+++++ 0.3099	0.3093 0.3230	0.3327 0.3283	0.3151 0.3169	0.3609 0.3240	Ave		0.3245				4.9		30.0			
1-Butanol	+++++ 0.0748	+++++ 0.0634	+++++ 0.0717	+++++ 0.0609	0.0891 0.0550	Ave		0.0692				17.6		30.0			
Cyclohexane	+++++ 0.1134	+++++ 0.1152	0.1400 0.1105	0.1166 0.1078	0.1296 0.1039	Ave		0.1171				10.2		30.0			
Benzene	0.7960 0.6620	0.7900 0.6816	0.7649 0.6859	0.7115 0.6328	0.7640 0.6104	Ave		0.7099				9.3		30.0			
Carbon tetrachloride	0.4528 0.5284	0.5183 0.5468	0.5701 0.5481	0.5301 0.5316	0.5993 0.5366	Ave		0.5362				7.0		30.0			
2,3-Dimethylpentane	+++++ 0.1594	+++++ 0.1627	0.1839 0.1605	0.1751 0.1535	0.1840 0.1543	Ave		0.1667				7.5		30.0			
Thiophene	+++++ 0.3782	+++++ 0.4012	0.4215 0.4038	0.4017 0.3833	0.4462 0.3888	Ave		0.4031				5.5		30.0			
2,2,4-Trimethylpentane	+++++ 1.1058	+++++ 1.1220	1.2776 1.1099	1.1667 1.0517	1.2608 1.0127	Ave		1.1384				8.2		30.0			
Heptane	+++++ 0.2385	0.2555 0.2445	0.2659 0.2457	0.2523 0.2345	0.2773 0.2337	Ave		0.2498				5.9		30.0			
1,2-Dichloropropane	+++++ 0.2524	0.2684 0.2619	0.2900 0.2714	0.2611 0.2555	0.2873 0.2552	Ave		0.2670				5.1		30.0			
Trichloroethene	0.2965 0.3009	0.3106 0.3121	0.3255 ✓ 0.3179	0.3165 0.3027	0.3477 0.2985	Ave	✓	0.3129			✓	4.9		30.0			
Dibromomethane	+++++ 0.2764	+++++ 0.2876	0.3340 0.2946	0.3052 0.2795	0.3252 0.2826	Ave		0.2981				7.2		30.0			
Bromodichloromethane	0.5065 0.4927	0.5615 0.5146	0.5252 0.5303	0.5048 0.5057	0.5661 0.5130	Ave		0.5220				4.7		30.0			
1,4-Dioxane	+++++ 0.0706	+++++ 0.0671	0.0700 0.0796	0.0698 0.0663	0.0813 0.0522	Ave		0.0696				12.8		30.0			

RRF Tce = 0.31289 %RSD Tce = .015413 / 0.31289 = 4.93 OK JR 4/9/18

TCAL Calc

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

ICAL calc

TestAmerica Knoxville
Target Compound Quantitation Report

RRF Ethanol = 16323 / 283788 × 4 / 0.4 = 0.575 (not reported on summary)

Data File:	\\ChromNA\Knoxville\ChromData\MJ\20180215-7391.b\JB15ICL03.D				
Lims ID:	IC L3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	15-Feb-2018 17:07:30	ALS Bottle#:	8	Worklist Smp#:	5
Purge Vol:	500.000 mL	Dil. Factor:	1.0000		
Sample Info:	140-0007391-005				
Misc. Info.:	140829				
Operator ID:	403648	Instrument ID:	MJ		
Sublist:	chrom-MJ_TO15*sub14				
Method:	\\ChromNA\Knoxville\ChromData\MJ\20180215-7391.b\MJ_TO15.m				
Limit Group:	MSA TO14A_15 Routine ICAL				
Last Update:	19-Feb-2018 10:03:06	Calib Date:	15-Feb-2018 22:24:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Knoxville\ChromData\MJ\20180215-7391.b\JB15ICL10.D				
Column 1 :	RTX-5 (0.32 mm)		Det: MS SCAN		
Process Host:	XAWRK031				

gn 4/9/18

First Level Reviewer: barlozhetskayaa Date: 15-Feb-2018 17:45:23

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	128	9.684	9.689	-0.005	92	283788	4.00	4.00	
* 2 1,4-Difluorobenzene	114	11.787	11.790	-0.003	95	1596917	4.00	4.00	
* 3 Chlorobenzene-d5 (IS)	117	16.387	16.389	-0.002	88	1445918	4.00	4.00	
$ 4 4-Bromofluorobenzene (Surr	95	17.990	17.992	-0.002	94	1068525	4.00	4.09	
6 Chlorodifluoromethane	67	4.202	4.203	-0.001	94	3577	0.0800	0.1180	
7 Propene	41	4.213	4.216	-0.003	72	7440	0.0800	0.0901	
8 Dichlorodifluoromethane	85	4.277	4.274	0.003	99	21153	0.0800	0.0831	
9 Chloromethane	52	4.482	4.482	0.000	60	3270	0.0800	0.1098	
10 1,2-Dichloro-1,1,2,2-tetra	135	4.487	4.489	-0.002	91	13879	0.0800	0.0832	
11 Acetaldehyde	44	4.665	4.662	0.003	97	23331	0.4000	0.7058	
12 Vinyl chloride	62	4.681	4.679	0.002	97	8173	0.0800	0.0881	
13 Butadiene	54	4.783	4.777	0.006	64	6527	0.0800	0.0871	
14 Butane	43	4.778	4.777	0.001	87	12961	0.0800	0.0911	
15 Bromomethane	94	5.149	5.146	0.003	97	8215	0.0800	0.0889	
16 Chloroethane	64	5.305	5.304	0.001	95	3968	0.0800	0.0824	
17 Ethanol	31	5.434	5.435	-0.001	97	16323	0.4000	0.4748	
18 Vinyl bromide	106	5.644	5.641	0.003	92	7192	0.0800	0.0819	
19 2-Methylbutane	43	5.692	5.693	-0.001	91	9927	0.0800	0.0947	
20 Trichlorofluoromethane	101	5.929	5.933	-0.004	99	20764	0.0800	0.0843	
21 Acrolein	56	5.956	5.950	0.006	26	3610	0.0800	0.1468	
22 Acetone	58	6.096	6.081	0.015	97	12587	0.2400	0.3896	
24 Pentane	72	6.171	6.171	0.000	97	1626	0.0800	0.1083	
25 Isopropyl alcohol	45	6.209	6.201	0.008	92	24895	0.2400	0.2688	
26 Ethyl ether	31	6.381	6.362	0.019	95	7476	0.0800	0.0935	
27 1,1-Dichloroethene	96	6.693	6.692	0.001	96	8381	0.0800	0.0892	
28 Acrylonitrile	53	6.806	6.809	-0.003	96	5617	0.0800	0.1000	
30 2-Methyl-2-propanol	59	6.897	6.865	0.032	75	9512	0.0800	0.0527	
29 1,1,2-Trichloro-1,2,2-trif	101	6.876	6.875	0.001	96	16313	0.0800	0.0838	
32 Methylene Chloride	84	7.059	7.061	-0.002	96	18593	0.0800	0.1829	
31 3-Chloro-1-propene	39	7.080	7.077	0.003	97	9005	0.0800	0.0817	

RRF = 10397/1596917 x 4/08 ICAL Calc
TCE
Report Date: 19-Feb-2018 10:03:08 Chrom Revision: 2.2 08-Feb-2018 13:38:42
Data File: \\ChromNA\Knoxville\ChromData\MJ\20180215-7391.b\JB15ICL03.D = 0.13255 OK

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ppb v/v	OnCol Amt ppb v/v	Flags
33 Carbon disulfide	76	7.242	7.239	0.003	98	24693	0.0800	0.0906	JV 4/9/18
34 trans-1,2-Dichloroethene	96	7.898	7.903	-0.005	74	7875	0.0800	0.0838	
35 2-Methylpentane	43	7.919	7.917	0.002	93	20535	0.0800	0.0949	
36 Methyl tert-butyl ether	73	8.070	8.053	0.017	95	17128	0.0800	0.0821	
37 1,1-Dichloroethane	63	8.344	8.343	0.001	98	14950	0.0800	0.0847	
38 Vinyl acetate	43	8.441	8.442	-0.001	100	16018	0.0800	0.0796	
40 2-Butanone (MEK)	72	8.941	8.919	0.022	81	3466	0.0800	0.0955	
39 Hexane	56	8.925	8.922	0.003	80	8192	0.0800	0.1073	
41 Isopropyl ether	45	9.108	9.091	0.017	97	20843	0.0800	0.0834	
42 cis-1,2-Dichloroethene	96	9.340	9.347	-0.007	95	8074	0.0800	0.0842	
43 Ethyl acetate	43	9.539	9.529	0.010	97	15186	0.0800	0.0947	
44 Chloroform	83	9.689	9.697	-0.008	29	17816	0.0800	0.0877	
45 Tert-butyl ethyl ether	59	9.808	9.782	0.026	94	18484	0.0800	0.0794	
46 Tetrahydrofuran	42	10.146	10.126	0.020	95	8227	0.0800	0.0956	
47 1,1,1-Trichloroethane	97	10.722	10.721	0.001	96	18145	0.0800	0.0858	
48 1,2-Dichloroethane	62	10.819	10.825	-0.006	95	10626	0.0800	0.0820	
49 Cyclohexane	69	11.287	11.287	0.000	69	4472	0.0800	0.0956	
50 Benzene	78	11.292	11.291	0.001	97	24429	0.0800	0.0862	
52 Carbon tetrachloride	117	11.314	11.310	0.004	97	18207	0.0800	0.0851	
55 2,3-Dimethylpentane	71	11.389	11.384	0.005	91	5875	0.0800	0.0883	
51 Thiophene	84	11.551	11.554	-0.004	95	13462	0.0800	0.0837	
56 Isooctane	57	11.997	11.995	0.002	98	40803	0.0800	0.0898	
57 n-Heptane	71	12.347	12.342	0.005	90	8492	0.0800	0.0852	
58 1,2-Dichloropropane	63	12.454	12.451	0.003	88	9261	0.0800	0.0869	
59 Trichloroethene	130	12.476	12.480	-0.004	95	10397	0.0800	0.0832	
60 Dibromomethane	93	12.567	12.569	-0.002	94	10667	0.0800	0.0896	
61 Dichlorobromomethane	83	12.702	12.704	-0.002	98	16774	0.0800	0.0805	
62 1,4-Dioxane	88	12.761	12.735	0.026	80	2237	0.0800	0.0805	
63 Methyl methacrylate	41	12.782	12.776	0.006	94	8382	0.0800	0.0864	
64 Methylcyclohexane	83	13.224	13.222	0.002	96	15575	0.0800	0.0875	
65 4-Methyl-2-pentanone (MIBK	43	13.632	13.618	0.014	94	14225	0.0800	0.0972	
66 cis-1,3-Dichloropropene	75	13.659	13.659	0.000	96	13343	0.0800	0.0812	
67 trans-1,3-Dichloropropene	75	14.326	14.329	-0.003	97	10875	0.0800	0.0777	
68 Toluene	91	14.461	14.458	0.003	95	25542	0.0800	0.0837	
69 1,1,2-Trichloroethane	83	14.531	14.532	-0.001	96	7985	0.0800	0.0857	
72 2-Hexanone	58	14.918	14.908	0.010	94	5895	0.0800	0.0820	
73 n-Octane	85	15.101	15.100	0.001	94	8774	0.0800	0.0828	
74 Chlorodibromomethane	129	15.225	15.227	-0.002	97	16372	0.0800	0.0796	
75 Ethylene Dibromide	107	15.515	15.514	0.001	94	14297	0.0800	0.0827	
76 Tetrachloroethene	129	15.574	15.575	-0.001	96	10866	0.0800	0.0898	
77 2,3-Dimethylheptane	43	16.424	16.423	0.001	93	29861	0.0800	0.0960	
78 Chlorobenzene	112	16.435	16.437	-0.002	94	20875	0.0800	0.0849	
79 Ethylbenzene	91	16.709	16.711	-0.002	98	32565	0.0800	0.0861	
81 m-Xylene & p-Xylene	91	16.865	16.869	-0.004	0	48711	0.1600	0.1720	
82 n-Nonane	57	17.253	17.252	0.001	93	18443	0.0800	0.0894	
83 Styrene	104	17.328	17.331	-0.003	98	17705	0.0800	0.0807	
84 Bromoform	173	17.333	17.333	0.000	90	17167	0.0800	0.0778	
85 o-Xylene	91	17.393	17.391	0.002	99	24847	0.0800	0.0827	
86 1,1,2,2-Tetrachloroethane	83	17.705	17.708	-0.003	98	18692	0.0800	0.0861	
87 1,2,3-Trichloropropane	110	17.861	17.864	-0.003	98	4845	0.0800	0.0852	
88 Isopropylbenzene	105	17.952	17.956	-0.004	89	36334	0.0800	0.0889	
89 N-Propylbenzene	120	18.458	18.462	-0.004	99	9302	0.0800	0.0827	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306BG | Lab Sample ID: 140-10922-1

Matrix: Air | Lab File ID: JC12p108.D

Analysis Method: TO 15 LL | Date Collected: 03/07/2018 08:15

Sample wt/vol: 500 (mL) | Date Analyzed: 03/12/2018 23:30

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 18726 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	ND		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	ND		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.16	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	ND		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	ND		0.82	
71-43-2	Benzene	78.11	0.46		0.26	
100-44-7	Benzyl chloride	126.58	ND		0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	1.0		0.20	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	1.2		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.16	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306BG | Lab Sample ID: 140-10922-1

Matrix: Air | Lab File ID: JC12p108.D

Analysis Method: TO 15 LL | Date Collected: 03/07/2018 08:15

Sample wt/vol: 500(mL) | Date Analyzed: 03/12/2018 23:30

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 18726 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND		0.68	
75-71-8	Dichlorodifluoromethane	120.91	2.8		0.40	
64-17-5	Ethanol	46.07	ND		3.8	
100-41-4	Ethylbenzene	106.17	ND		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	ND		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	0.93		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	ND		0.35	
95-47-6	o-Xylene	106.17	ND		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	ND		0.54	
108-88-3	Toluene	92.14	0.55		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	ND		0.19	
75-69-4	Trichlorofluoromethane	137.37	1.5		0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	97		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306SS | Lab Sample ID: 140-10922-2

Matrix: Air | Lab File ID: JC12p109.D

Analysis Method: TO 15 LL | Date Collected: 03/07/2018 08:22

Sample wt/vol: 500(mL) | Date Analyzed: 03/13/2018 00:17

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 18726 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	4.8		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	1.0		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.16	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	ND		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	2.5		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	1.4		0.82	
71-43-2	Benzene	78.11	0.72		0.26	
100-44-7	Benzyl chloride	126.58	ND		0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.85		0.20	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	0.57		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.16	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306SS | Lab Sample ID: 140-10922-2

Matrix: Air | Lab File ID: JC12p109.D

Analysis Method: TO 15 LL | Date Collected: 03/07/2018 08:22

Sample wt/vol: 500(mL) | Date Analyzed: 03/13/2018 00:17

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 18726 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND		0.68	
75-71-8	Dichlorodifluoromethane	120.91	2.9		0.40	
~~*64-17-5*~~	~~*Ethanol*~~	~~*46.07*~~	~~*230*~~	~~*E*~~	~~*3.8*~~	See DL
100-41-4	Ethylbenzene	106.17	1.0		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	ND		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	1.1		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	2.7		0.35	
95-47-6	o-Xylene	106.17	0.66		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	3.2		0.97	
127-18-4	Tetrachloroethene	165.83	9.1		0.54	
108-88-3	Toluene	92.14	8.5		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	0.68		0.19	
75-69-4	Trichlorofluoromethane	137.37	2.4		0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	99		60-140

JR 4/9/18

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306SS DL Lab Sample ID: 140-10922-2 DL

Matrix: Air Lab File ID: JC13p201.D

Analysis Method: TO 15 LL Date Collected: 03/07/2018 08:22

Sample wt/vol: 100(mL) Date Analyzed: 03/14/2018 10:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 18727 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
64-17-5	Ethanol	46.07	150	D	19	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	98		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306IA | Lab Sample ID: 140-10922-3

Matrix: Air | Lab File ID: JC12p110.D

Analysis Method: TO 15 LL | Date Collected: 03/07/2018 08:34

Sample wt/vol: 500(mL) | Date Analyzed: 03/13/2018 01:05

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 18726 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
71-55-6	1,1,1-Trichloroethane	133.41	0.44		0.44	
79-34-5	1,1,2,2-Tetrachloroethane	167.85	ND		0.55	
79-00-5	1,1,2-Trichloroethane	133.41	ND		0.44	
76-13-1	1,1,2-Trichlorotrifluoroethane	187.38	ND		0.61	
75-34-3	1,1-Dichloroethane	98.96	ND		0.32	
75-35-4	1,1-Dichloroethene	96.94	ND		0.16	
120-82-1	1,2,4-Trichlorobenzene	181.45	ND		0.59	
95-63-6	1,2,4-Trimethylbenzene	120.20	0.67		0.39	
106-93-4	1,2-Dibromoethane	187.87	ND		0.61	
95-50-1	1,2-Dichlorobenzene	147.00	ND		0.48	
107-06-2	1,2-Dichloroethane	98.96	ND		0.32	
78-87-5	1,2-Dichloropropane	112.99	ND		0.37	
76-14-2	1,2-Dichlorotetrafluoroethane	170.92	ND		0.56	
108-67-8	1,3,5-Trimethylbenzene	120.20	ND		0.39	
541-73-1	1,3-Dichlorobenzene	147.00	ND		0.48	
106-46-7	1,4-Dichlorobenzene	147.00	ND		0.48	
123-91-1	1,4-Dioxane	88.11	ND		0.72	
540-84-1	2,2,4-Trimethylpentane	114.23	ND		0.93	
78-93-3	2-Butanone	72.11	2.2		0.94	
108-10-1	4-Methyl-2-pentanone (MIBK)	100.16	1.0		0.82	
71-43-2	Benzene	78.11	0.66		0.26	
100-44-7	Benzyl chloride	126.58	ND		0.83	
75-27-4	Bromodichloromethane	163.83	ND		0.54	
75-25-2	Bromoform	252.75	ND		0.83	
74-83-9	Bromomethane	94.94	ND		0.31	
56-23-5	Carbon tetrachloride	153.81	0.66		0.20	
108-90-7	Chlorobenzene	112.56	ND		0.37	
75-00-3	Chloroethane	64.52	ND		0.21	
67-66-3	Chloroform	119.38	ND		0.39	
74-87-3	Chloromethane	50.49	1.1		0.41	
156-59-2	cis-1,2-Dichloroethene	96.94	ND		0.16	
10061-01-5	cis-1,3-Dichloropropene	110.97	ND		0.36	
110-82-7	Cyclohexane	84.16	ND		0.69	

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306IA Lab Sample ID: 140-10922-3

Matrix: Air Lab File ID: JC12p110.D

Analysis Method: TO 15 LL Date Collected: 03/07/2018 08:34

Sample wt/vol: 500 (mL) Date Analyzed: 03/13/2018 01:05

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: RTX-5 ID: 0.32 (mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 18726 Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
124-48-1	Dibromochloromethane	208.29	ND		0.68	
75-71-8	Dichlorodifluoromethane	120.91	2.5		0.40	
~~*64-17-5*~~	~~*Ethanol*~~	~~*46.07*~~	~~*280*~~	~~*E*~~	~~*3.8*~~	See DL
100-41-4	Ethylbenzene	106.17	1.3		0.35	
87-68-3	Hexachlorobutadiene	260.76	ND		0.85	
110-54-3	Hexane	86.17	ND		0.70	
1634-04-4	Methyl tert-butyl ether	88.15	ND		0.58	
75-09-2	Methylene Chloride	84.93	1.2		0.69	
179601-23-1	m-Xylene & p-Xylene	106.17	4.5		0.35	
95-47-6	o-Xylene	106.17	1.2		0.35	
100-42-5	Styrene	104.15	ND		0.34	
75-65-0	t-Butyl alcohol	74.12	ND		0.97	
127-18-4	Tetrachloroethene	165.83	1.1		0.54	
108-88-3	Toluene	92.14	10		0.45	
156-60-5	trans-1,2-Dichloroethene	96.94	ND		0.32	
10061-02-6	trans-1,3-Dichloropropene	110.97	ND		0.36	
79-01-6	Trichloroethene	131.39	0.59		0.19	
75-69-4	Trichlorofluoromethane	137.37	1.4		0.45	
75-01-4	Vinyl chloride	62.50	ND		0.10	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	97		60-140

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Knoxville | Job No.: 140-10922-1

SDG No.:

Client Sample ID: HV20180306IA DL | Lab Sample ID: 140-10922-3 DL

Matrix: Air | Lab File ID: JC13p202.D

Analysis Method: TO 15 LL | Date Collected: 03/07/2018 08:34

Sample wt/vol: 100(mL) | Date Analyzed: 03/14/2018 10:53

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: RTX-5 ID: 0.32(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 18727 | Units: ug/m3

CAS NO.	COMPOUND NAME	MOLECULAR WEIGHT	RESULT	Q	RL	
64-17-5	Ethanol	46.07	300	D	19	

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	101		60-140