



April 27, 2012

Ms. Jenny Herman
Maryland Department of the Environment
Oil Control Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1719

**Re: Focused Risk Assessment – Vapor Intrusion at 1207 Chesaco Avenue
Gasoline Fueling Station – Royal Farms Store No. 64
7950 Pulaski Highway, Rosedale, Maryland 21237
OCP Case No. 10-0339-BA
Facility ID 3975
AEC Project No. 05-056RF064**

Dear Ms. Herman:

Advantage Environmental Consultants, LLC (AEC) is presenting this focused risk assessment concerning vapor intrusion (VI) at the 1207 Chesaco Avenue residence. The risk assessment compares the results of the recent indoor air quality (IAQ) and sub-slab vapor testing with residential vapor inhalation risk based standards developed by the MDE. This work is associated with Maryland Department of the Environment (MDE) Oil Control Program (OCP) Case No. 10-0339-BA. The work was performed pursuant to MDE's Work Plan Approval letter, dated January 25, 2012. Figures 1 and 2 in Attachment A illustrate the site vicinity and site features.

Introduction

The Royal Farms Site (7950 Pulaski Highway) is situated in a commercial/residential area located northwest of the intersection of Chesaco Avenue and Pulaski Highway, in the Rosedale area of Baltimore County, Maryland. The Site is developed with a convenience store/gasoline fueling station and associated asphalt- and concrete-paved areas and landscaped areas. The Site currently operates four, 10,000-gallon, fiber-glass reinforced plastic, underground storage tanks (USTs) which distribute fuel to four product dispensers.

The surrounding properties include residences to the north, and commercial properties to the south, east and west. A retaining wall separates the Site and the northern adjoining residence (1205 Chesaco Avenue). The surface elevation difference between the two properties ranges from approximately 2 to 10 feet which increases in a westerly direction. Further north and adjacent to the 1205 property is 1207 Chesaco Avenue.

The 1207 Chesaco Avenue structure is of brick construction and contains two apartments (referred to as 1st floor and 2nd floor). The structure also contains a finished basement which is primarily used by the 1st floor tenant. The basement contains a natural gas fired boiler which provides heat to the structure via hot water radiators. Several home utility lines penetrate the basement ceiling and include hot water (bath and radiator), natural gas for appliances and drinking water lines. A sump pit is located near the southwest corner of the basement. This sump discharges primarily during rainfall events.

On December 15, 2009, the MDE OCP opened a case in response to a report of evidence of a petroleum spill at 1205 Chesaco Avenue, which adjoins the Site to the north. The Baltimore County Fire Department (BCFD) initially responded to a 911 call from the 1205 Chesaco Avenue resident and reportedly observed approximately 1.5 inches of gasoline in the basement dewatering sump at this residence. The dewatering sump had discharged petroleum impacted water onto the backyard, which then migrated via overland flow to a neighboring driveway (1207 Chesaco Avenue). At that time, basement dewatering sumps at adjacent residences were checked by the BCFD for the presence of liquid-phase hydrocarbons (LPH) and field screened for vapor-phase hydrocarbons (VPH). No LPH or VPH were detected at the adjacent residences. The 1205 Chesaco residence has been unoccupied since the release was reported.

The UST observation wells (tank pit (TP) wells) and UST over-fill containment sumps at the Site were gauged by the MDE Emergency Response Division (ERD). LPH was observed in both TP wells and one of the containment sumps. The fuel dispensers were shut down on December 15, 2009, until the leak could be located and repaired. A tank test determined that a leak had occurred from an "O" ring at the top of the check valve of the pump on the regular-grade gasoline UST. A subsequent review of inventory records showed a loss of approximately 5,400 gallons of gasoline.

Recent Data Collection Efforts

On March 22 through March 24, 2012 IAQ samples were obtained from the 1207 Chesaco Avenue residences. Samples were collected from the basement near the bathroom (IAQ-01) and bottom of stairs (IAQ-01A), the first level dining room (IAQ-02), and the second level dining room (IAQ-03) and living room (IAQ-03A). In addition, two sub-slab vapor samples were collected in the 1207 basement (SV-01 located near the sump and SV-02 located near the bathroom). A background ambient air sample was collected from the western (AA-01) side of the exterior of the residence near the basement door. All of these samples were analyzed for volatile organic compounds (VOCs). Prior to sampling, all known VOC containing materials were removed from the 1207 Chesaco structure. In addition, tenants were asked to complete an Occupied Dwelling Questionnaire for Indoor Air Surveys (see Attachment B).

On April 25, 2012 a sump water sample was collected from the sump pit in the basement. The sump pit was not recharged prior to sample collection. The sump was partially full but it was apparent that enabling the sump pump would empty the pit and no sample would be available for collection. The sump sample was analyzed for VOCs,

total petroleum hydrocarbons (TPH) gasoline range organics (GRO), and diesel range organics (DRO).

Data Interpretation

With the exception of samples taken from the second floor of 1207 Chesaco, all IAQ samples collected contained benzene at concentrations below the MDE residential standard of 3.1 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The 1207 second floor samples indicated benzene concentrations of 4.86 in IAQ-03 and 4.19 $\mu\text{g}/\text{m}^3$ in IAQ-03A. Sub-slab sampling results indicate concentrations of 10.2 and 1.47 $\mu\text{g}/\text{m}^3$ in SV-01 and SV-02, respectively.

The results of the sump sample analysis indicate that all analytes are below detection limits. Another sump pit sample collection effort occurred on December 23, 2009 in which all analytes were below detection limits. Pathways of exposure such as dermal contact and ingestion of sump water are incomplete (i.e., the sump water is not impacted by petroleum hydrocarbons) based on these findings.

The sub-slab and IAQ results were used to develop VI attenuation factors (AF). Attenuation is the gradual loss in intensity or concentration of any kind of flux through a medium. Sub-slab to indoor air attenuation factors are calculated by dividing the measured IAQ concentration by the sub-slab vapor concentration. A larger AF value indicates less attenuation and a smaller AF value indicates more attenuation. For example, at an AF = 0.001 a subsurface concentration of 1000 $\mu\text{g}/\text{m}^3$ will attenuate to an indoor air concentration of 1 $\mu\text{g}/\text{m}^3$. At an AF = 0.1, the same subsurface concentration of 1000 $\mu\text{g}/\text{m}^3$ will attenuate to an indoor air concentration of 100 $\mu\text{g}/\text{m}^3$.

A site specific analysis indicates that the majority of the sub-slab attenuation factors fall between 0.22 and 0.24 at lower indoor air concentrations. At higher indoor air concentrations, the attenuation factors fall between 0.41 and 0.48, suggesting that there is either less attenuation, or that ambient sources such as tobacco smoke are the likely primary source of VOCs in the second floor's indoor air. Attachment C includes several tables which summarize the current and historical analytical results and attenuation values.

Conclusions

It is AEC's opinion that the benzene vapor detected in the 1207 second floor samples is not associated with vapor intrusion from the release of petroleum at the Site for the following reasons:

- Benzene has a vapor density that is greater than air and will sink to the lowest possible level. This is counter to the existing vapor distribution which indicates the highest benzene levels are found on the second floor.
- The concentrations of benzene detected in the samples collected from the basement (2.40 and 2.36 $\mu\text{g}/\text{m}^3$ in IAQ-01 and 01A) and the first floor (2.24 $\mu\text{g}/\text{m}^3$ in

IAQ-02) are significantly less than the concentration detected on the 2nd floor and are consistent with ambient levels (outdoor sample - $1.82 \mu\text{g}/\text{m}^3$).

- There appears to be no vapor conduit such as forced air heating/air conditioning from the basement or first floor into the second floor. All of the other utility penetrations which were inspected indicate that significant air flow through the penetrations is not occurring.
- Through conversations with Debbie Cvach (owner of 1207 Chesaco) and field observations (i.e., remnant odor of stale tobacco), the house guests of the 2nd floor smoke cigarettes in the home. Tobacco smoke is a known source of benzene. As indicated in the Occupied Dwelling Questionnaire – Indoor Air Assessment Surveys there is demonstrated tobacco use on the second floor of the 1207 Chesaco structure. These questionnaires (current survey and additional historical surveys (August 19, 2010 and October 5, 2011) for 1207 Chesaco second floor) are included as Attachment B.

In conclusion, tobacco smoke is a known source of benzene, and is likely the cause of the elevated concentration of benzene detected in samples from the 2nd floor. AEC recommends continued monitoring of the IAQ levels in the 1207 Chesaco residence.

If you should have any questions regarding these documents, or if we can be of further assistance, please contact the undersigned at (301) 776-0500.

Sincerely,

ADVANTAGE ENVIRONMENTAL CONSULTANTS, LLC

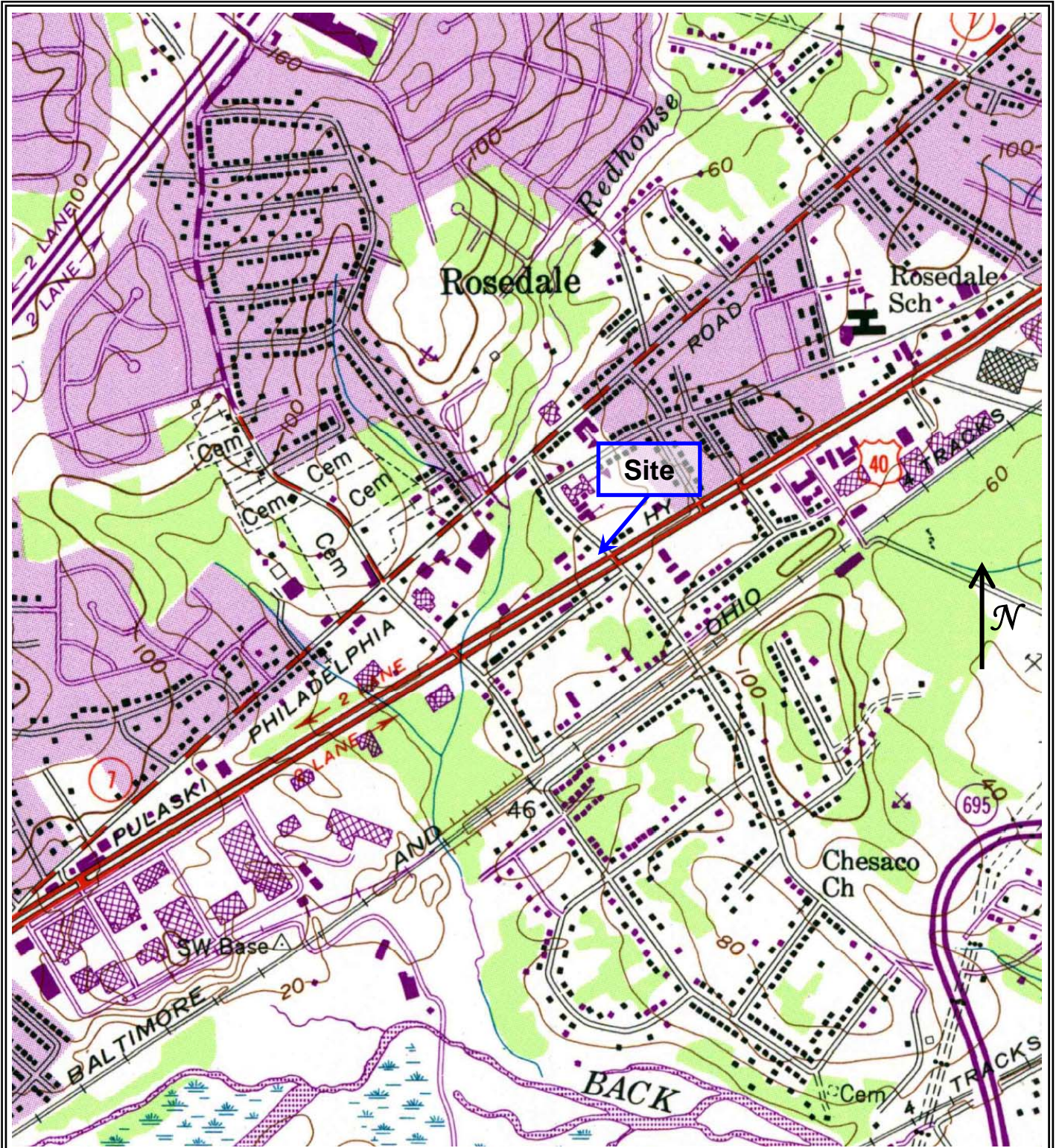


Jeffrey S. Stein, P.G.
Principal

Attachments

Cc: T Ruszin, Royal Farms
D. Cvach, Property Owner, 1207 Chesaco Avenue

ATTACHMENT A



USGS Topographic Quad Map, Baltimore East, MD, 1974

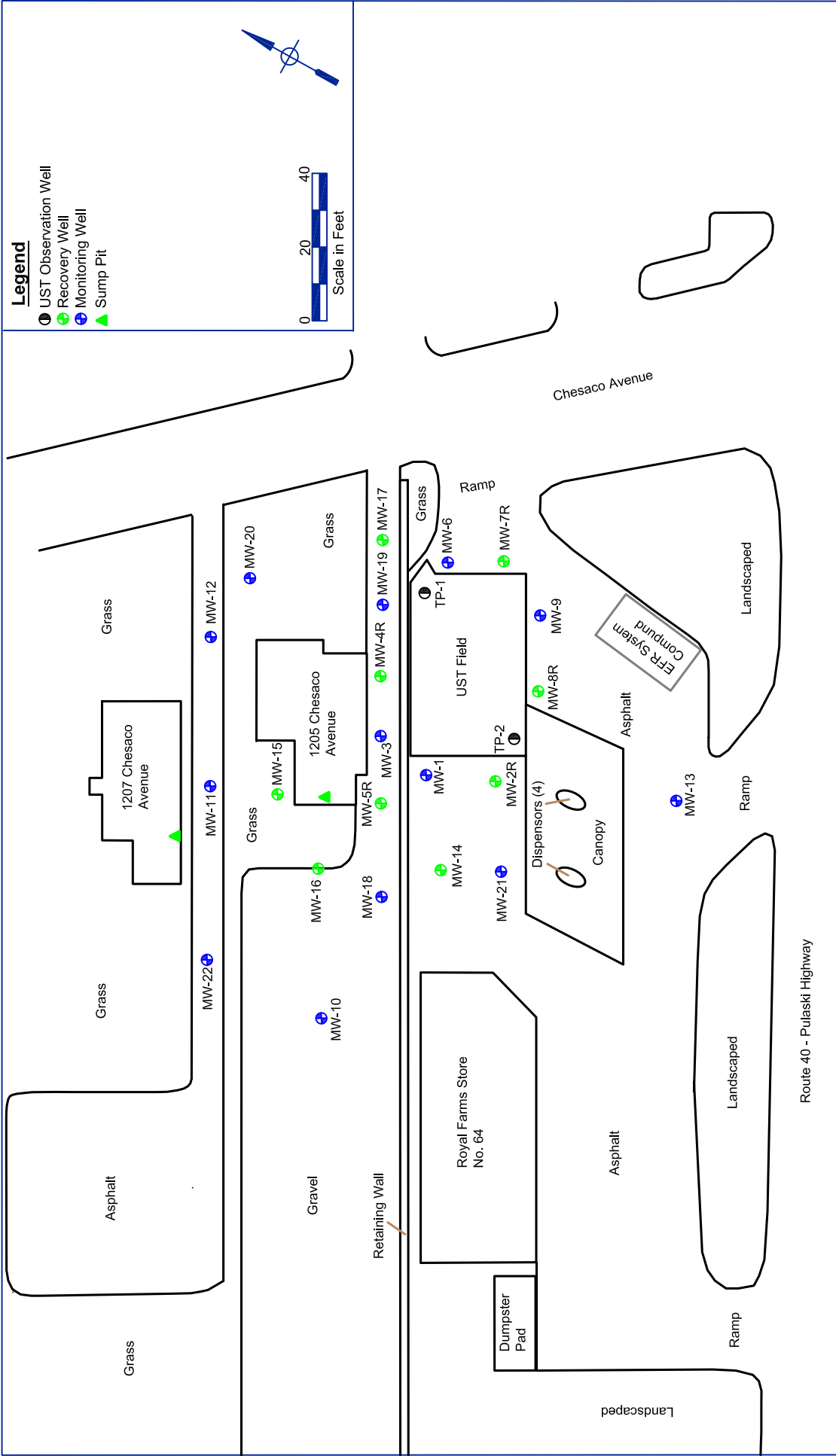
Advantage Environmental Consultants, LLC
 8610 Washington Boulevard, Suite 217
 Jessup, MD 20794
 (301) 776-0500 Office
 (301) 776-1123 Fax

Figure 1 - Site Vicinity Map
 Royal Farms Store 64
 7950 Pulaski Highway
 Baltimore, Maryland 21237

Work Order No.:
 05-056RF064

Report Date:
 Nov. 2011

Drawn By:
 JSS



Advantage Environmental Consultants, LLC 8610 Washington Blvd., Suite 217 Jessup, MD 20794 Phone 301-776-0500 Fax 301-776-1123		Project No. 05-056	Drawn by: JDW
		Task No. RF064	Date: 4-27-12
File: Site Features		Revision No. 3	Figure 2 - Site Features Map Royal Farms No. 64 7950 Pulaski Highway Baltimore, MD 21237

ATTACHMENT B

1207-Second Floor



New Jersey Department of Environmental Protection

INDOOR AIR BUILDING SURVEY and SAMPLING FORM

Preparer's name: Tony Rubino Date: 3/22/12
Preparer's affiliation: AEC Phone #: 301-776-0500
Site Name: RF-64 Case #: 10-0339-BA

Part I - Occupants

Building Address: 1207 Chesaco Ave, Rosedale, MD 21237
Property Contact: Robert Harmer Owner / Renter / other:
Contact's Phone: home (410) 918-9815 work () cell ()
of Building occupants: Children under age 13 0 Children age 13-18 0 Adults 2

Part II - Building Characteristics

Building type: residential multi-family residential / office / strip mall / commercial / industrial
Describe building: 2-story w/basement Year constructed: 1951
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 1 (full basement) / crawl space / slab on grade
Number of floors at or above grade: 2
Depth of basement below grade surface: 0.5 ft. Basement size: 850 ft^2
Basement floor construction: concrete / dirt / floating / stone / other (specify):
Foundation walls: poured concrete / cinder blocks / stone / other (specify):
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply): hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify):
Type of ventilation system (circle all that apply): central air conditioning mechanical fans bathroom ventilation fans individual air
conditioning units kitchen range hood fan outside air intake
other (specify): 2 window AC units on the south side of the second floor
Type of fuel utilized (circle all that apply): Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes No

Is there a whole house fan? Yes / No

Septic system? Yes / Yes (but not used) / No

Irrigation/private well? Yes / Yes (but not used) / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier: _____

Part III - Outside Contaminant Sources

NJDEP contaminated site (1000-ft. radius): NA

Other stationary sources nearby (gas stations, emission stacks, etc.): RF-69

Heavy vehicular traffic nearby (or other mobile sources): Chesaca Ave. + Salisbury Hwy.

Part IV - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

Potential Sources	Location(s)	Removed (Yes / No / NA)
Gasoline storage cans	<u>Standard household cleaning supplies. See photos. All materials were removed and stored in the storage shed located behind the 1207 structure at the request of the owner.</u>	
Gas-powered equipment		
Kerosene storage cans		
Paints / thinners / strippers		
Cleaning solvents		
Oven cleaners		
Carpet / upholstery cleaners		
Other house cleaning products		
Moth balls		
Polishes / waxes		
Insecticides		
Furniture / floor polish		
Nail polish / polish remover		
Hairspray		
Cologne / perfume		
Air fresheners		
Fuel tank (inside building)		NA
Wood stove or fireplace		NA
New furniture / upholstery		
New carpeting / flooring		NA
Hobbies - glues, paints, etc.		

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes No How often? _____

Last time someone smoked in the building? 4 months hours / days ago *A visitor to the 2nd floor apartment was an occasional smoker.*

Does the building have an attached garage directly connected to living space? Yes No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes No *A slight remnant tobacco odor was noted on the 2nd floor on this date*

Do the occupants of the building have their clothes dry cleaned? Yes No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes No

If so, when and which chemicals? TruGreen Chemtura (last application was in fall 2011)

Has there ever been a fire in the building? Yes No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Tony Rubino Phone number: (301) 776-0500

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: MD. Spectral Svcs.

Sample locations (floor, room):

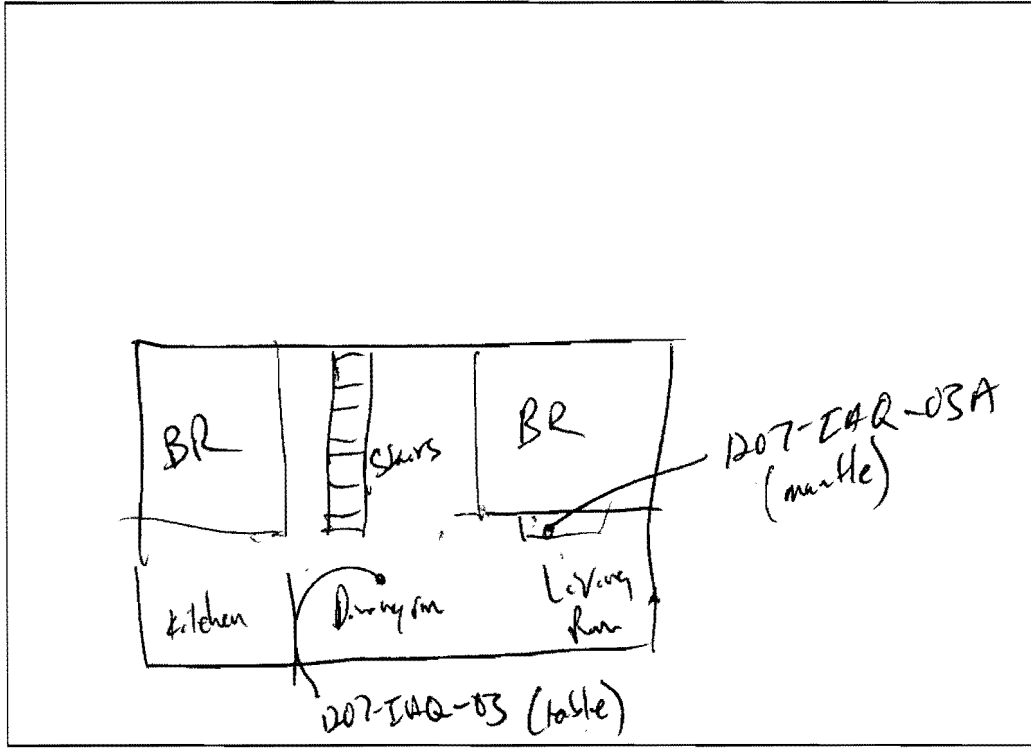
Field ID # 1207-IAQ-03 Field ID # _____

Field ID # 1207-IAQ-03A Field ID # _____

Were "Instructions for Occupants" followed? Yes No

If not, describe modifications: _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes No

Describe the general weather conditions: ~60°F w/ fog (sun on 3/22/12)

Part VIII - General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Slight remnant tobacco odor noted on 3/22/12

(NJDEP 1997; NHDES 1998; VDOH 1993; MassDEP 2002; NYSDOH 2005; CalEPA 2005)

1207 First Floor



New Jersey Department of Environmental Protection

INDOOR AIR BUILDING SURVEY and SAMPLING FORM

Preparer's name: Tony Rubino Date: 3/22/12
Preparer's affiliation: AEC Phone #: 301-776-0500
Site Name: RF-64 Case #: 10-0339-B1A

Part I - Occupants

Building Address: 1207 Chesaco Avenue, Rosedale, MD 21237
Property Contact: Margaret Zuby Owner (Renter) / other:
Contact's Phone: home (410) 682-2155 work () cell ()
of Building occupants: Children under age 13 0 Children age 13-18 0 Adults 1

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2-story w/ basement Year constructed: 1951
Sensitive population: day care / nursing home / hospital / school / other (specify): N/A
Number of floors below grade: 1 (full basement) / crawl space / slab on grade
Number of floors at or above grade: 2
Depth of basement below grade surface: 0-5 ft. Basement size: 850 ft^2
Basement floor construction: concrete / dirt / floating / stone / other (specify):
Foundation walls: poured concrete / cinder blocks / stone / other (specify):
Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No
Type of heating system (circle all that apply): hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify):
Type of ventilation system (circle all that apply): central air conditioning mechanical fans bathroom ventilation fans individual air
conditioning units kitchen range hood fan outside air intake
other (specify): 2 window air conditioning units on the south side of 2nd floor
Type of fuel utilized (circle all that apply): Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes No

Septic system? Yes / Yes (but not used) No

Irrigation/private well? Yes / Yes (but not used) No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes No active / passive

Sub-slab vapor/moisture barrier in place? Yes No

Type of barrier: _____

Part III - Outside Contaminant Sources

NJDEP contaminated site (1000-ft. radius): NA

Other stationary sources nearby (gas stations, emission stacks, etc.): RF-64

Heavy vehicular traffic nearby (or other mobile sources): Chesaco Ave. + Palisade Hwy.

Part IV - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

Potential Sources	Location(s)	Removed (Yes / No / NA)
Gasoline storage cans	<i>Standard household cleaning supplies, at Kroger's, etc. See photos. All products were removed and stored in the storage shed located behind the 1207 S structure at the request of the owner.</i>	
Gas-powered equipment		
Kerosene storage cans		
Paints / thinners / strippers		
Cleaning solvents		
Oven cleaners		
Carpet / upholstery cleaners		
Other house cleaning products		
Moth balls		
Polishes / waxes		
Insecticides		
Furniture / floor polish		
Nail polish / polish remover		
Hairspray		
Cologne / perfume		
Air fresheners		
Fuel tank (inside building)		NA
Wood stove or fireplace		NA
New furniture / upholstery		
New carpeting / flooring		NA
Hobbies - glues, paints, etc.		

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? 4 months hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? Trugreen Chem Lawa (last application was in Fall 2011)

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Tony Rubino Phone number: (301) 776 - 0500

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: MD. Spectal Svcs

Sample locations (floor, room):

Field ID # _____ - 1207-IAQ-02 Field ID # _____ - _____

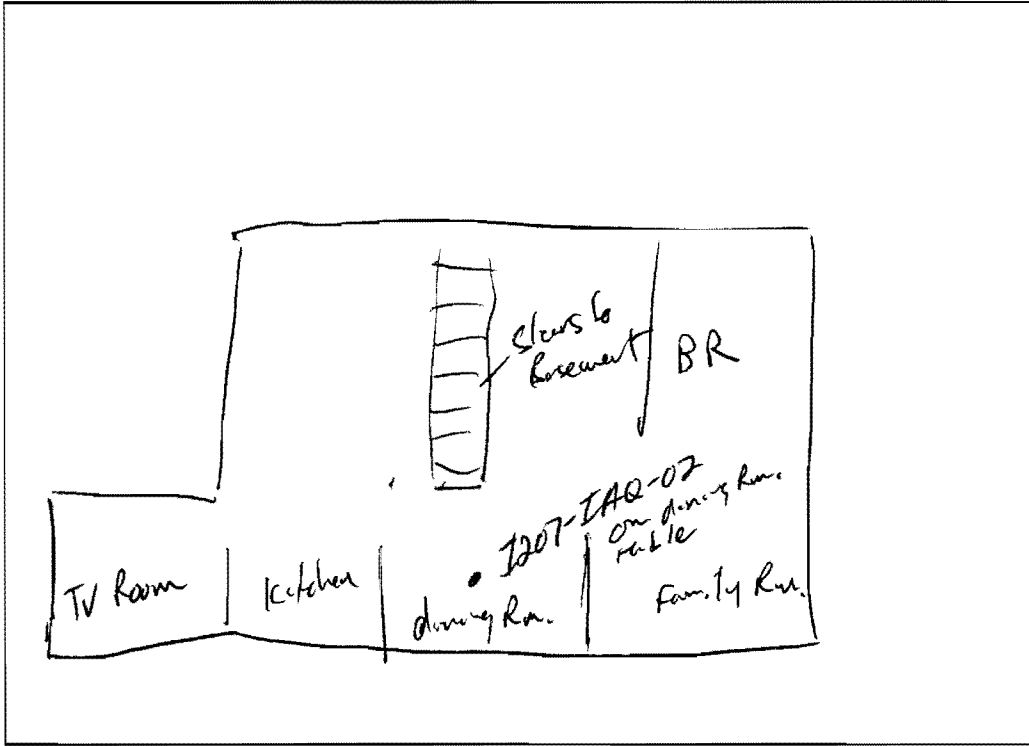
Field ID # _____ - _____ Field ID # _____ - _____

Were "Instructions for Occupants" followed? Yes / No

If not, describe modifications: _____

A visitor to the 2nd floor apartment was an occasional smoker. A slight remnant tobacco odor was noted on the 2nd floor on this date.

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes No

Describe the general weather conditions: ≈ 60°F w/ fog (am on 3/22/12)

Part VIII - General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Air Freshner odors noted on 1st Floor. Tenant indicated that there were no significant changes since the last sampling event.

(NJDEP 1997; NHDES 1998; VDOH 1993; MassDEP 2002; NYSDOH 2005; CalEPA 2005)

1207 Basement



New Jersey Department of Environmental Protection

INDOOR AIR BUILDING SURVEY and SAMPLING FORM

Preparer's name: Tony Rubino Date: 3/22/12
Preparer's affiliation: AEC Phone #: 301-776-0500
Site Name: RF-64 Case #: 10-0339-BA

Part I - Occupants

Building Address: 1207 Chesaca Avenue, Rosedale, MD 21237
Property Contact: Margaret Zubly Owner (Renter) other:
Contact's Phone: home (410) 682-2155 work () cell ()
of Building occupants: Children under age 13 0 Children age 13-18 0 Adults 1

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial
Describe building: 2-story w/ basement Year constructed: 1951
Sensitive population: day care / nursing home / hospital / school / other (specify): NA
Number of floors below grade: 1 (full basement) / crawl space / slab on grade
Number of floors at or above grade: 2
Depth of basement below grade surface: 0-5 ft. Basement size: 850 ft^2
Basement floor construction: concrete / dirt / floating / stone / other (specify):
Foundation walls: poured concrete / cinder blocks / stone / other (specify):
Basement sump present? (Yes) / No Sump pump? (Yes) / No Water in sump? (Yes) / No
Type of heating system (circle all that apply): hot air circulation hot air radiation wood steam radiation
heat pump hot water radiation kerosene heater electric baseboard
other (specify):
Type of ventilation system (circle all that apply): central air conditioning mechanical fans bathroom ventilation fans individual air
conditioning units kitchen range hood fan outside air intake
other (specify): 2 window air conditioning units on South side of 2nd floor
Type of fuel utilized (circle all that apply): Natural gas / electric / fuel oil / wood / coal / solar / kerosene
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes (No)

Is there a whole house fan? Yes No

Septic system? Yes / Yes (but not used) No

Irrigation/private well? Yes / Yes (but not used) No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes No
 Type of barrier: _____

Part III - Outside Contaminant Sources

NJDEP contaminated site (1000-ft. radius): NA

Other stationary sources nearby (gas stations, emission stacks, etc.): RE-64

Heavy vehicular traffic nearby (or other mobile sources): Pulaski Hwy + Chesaco Ave.

Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

Potential Sources	Location(s)	Removed (Yes / No / NA)
Gasoline storage cans	<i>Standard household cleaning supplies, air fresheners, etc. See photos. All materials were removed and stored in storage shed behind 1207 structure at the request of the property owner.</i>	
Gas-powered equipment		
Kerosene storage cans		
Paints / thinners / strippers		
Cleaning solvents		
Oven cleaners		
Carpet / upholstery cleaners		
Other house cleaning products		
Moth balls		
Polishes / waxes		
Insecticides		
Furniture / floor polish		
Nail polish / polish remover		
Hairspray		
Cologne / perfume		
Air fresheners		
Fuel tank (inside building)		NA
Wood stove or fireplace		NA
New furniture / upholstery		
New carpeting / flooring		NA
Hobbies - glues, paints, etc.		

Part V – Miscellaneous Items

Do any occupants of the building smoke? Yes No How often? _____

Last time someone smoked in the building? 4 months hours / days ago

A visitor to the second floor apartment was an occasional smoker. A split panama tobacco odor was noted in the 2nd floor apartment on this date

Does the building have an attached garage directly connected to living space? Yes No

If so, is a car usually parked in the garage? Yes / No

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Yes / No

Have any pesticides/herbicides been applied around the building or in the yard? Yes / No

If so, when and which chemicals? Taqueen Chemkawa (last application was in fall 2011)

Has there ever been a fire in the building? Yes / No If yes, when? _____

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Part VI – Sampling Information

Sample Technician: Tony Rubino Phone number: (201) 776 - 0500

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

Sampler Type: Tedlar bag / Sorbent / Stainless Steel Canister / Other (specify): _____

Analytical Method: TO-15 / TO-17 / other: _____ Cert. Laboratory: MD. Spectral Svcs.

Sample locations (floor, room):

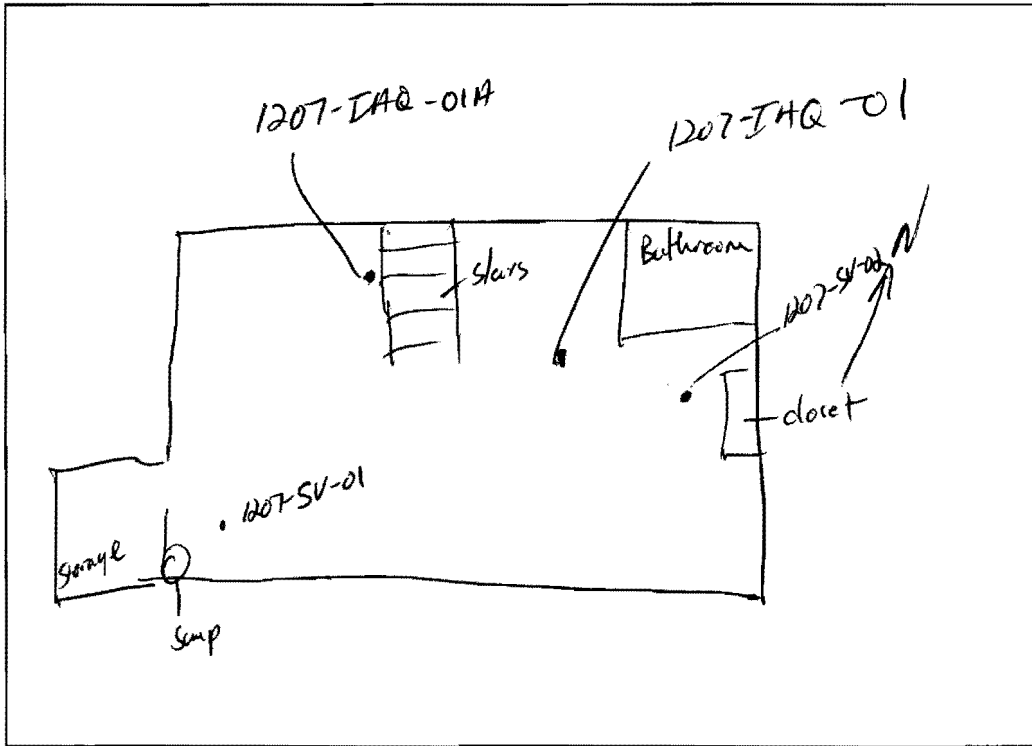
Field ID # _____ - 1207-SV-01 Field ID # _____ - 207-IAQ-01

Field ID # _____ - 1207-SV-02 Field ID # _____ - 1207-IAQ-01A

Were "Instructions for Occupants" followed? Yes / No

If not, describe modifications: _____

Provide Drawing of Sample Location(s) in Building



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes No

Describe the general weather conditions: ~60°F fog (am on 3/22/12)

Part VIII - General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

A french drain was observed around the perimeter of the basement. The french drain was observed to drain into the sump located in the SW corner of the basement. The basement slab was approx 8" thick w/ a gravel sub-base. Some minor penetrations were noted in the ceiling along with the doorway for stairs.

(NJDEP 1997; NHDDES 1998; VDOH 1993; MassDEP 2002; NYSDOH 2005; CalEPA 2005)

OCCUPIED DWELLING QUESTIONNAIRE

Indoor Air Assessment Survey

Date: 8/19/10

1. Name: ROBERT HARMIC

Address: 1207 CHESAPEAKE AVE 2nd FLOOR
BALTIMORE COUNTY MD 21237

Home Phone: 410 918 9815 Work Phone: N/A

2. What is the best time to call to speak with you? At: Work or Home?

3. Are you the Owner, Renter, Other (please specify) of this Home/Structure?

4. Total number of occupants/persons at this location? 2
Number of children? N/A Ages? N/A

5. How long have you lived at this location? 13 YRS

General Home Description

6. Type of Home/Structure (check only one): Single Family Home, Duplex, Condominium, Townhouse, Other 22-FLOOR SINGLE HOME

7. Home/Structure Description: number of floors 2
Basement? Yes No
Crawl Space? Yes No
If Yes, under how much of the house's area? %

8. Age of Home/Structure: 1951 years, Not sure/Unknown

9. General Above-Ground Home/Structure construction (check all that apply): Wood, Brick, Concrete, Cement block, Other

10. Foundation Construction (check all that apply): Concrete slab, Fieldstone, Concrete block

Below grade Basement

- Elevated above ground/grade
Other *DON'T KNOW*
11. What is the source of your drinking water (check all that apply)?
Public water supply
Private well
Bottled water
Other, please specify _____
12. Do you have a private well for purposes other than drinking?
Yes No
If yes, please describe what you use the well
for: _____
13. Do you have a septic system? Yes No Not used Unknown
14. Do you have standing water outside your home (pond, ditch, swale)? Yes No

Basement Description, please check appropriate boxes.

If you do not have a basement go to question 23.

15. Is the basement finished or unfinished ?
16. If finished, how many rooms are in the basement? *N/A*
How many are used for more than 2 hours/day? _____
17. Is the basement floor (check all that apply) concrete , tile , carpeted , dirt ,
other (describe) *DON'T KNOW*?
18. Are the basement walls poured concrete , cement block , stone , wood , brick ,
other *DON'T KNOW*?
19. Does the basement have a moisture problem (check one only)?
Yes, frequently (3 or more times/yr)
Yes, occasionally (1-2 times/yr)
Yes, rarely (less than 1 time/yr)
No
20. Does the basement ever flood (check one only)?
Yes, frequently (3 or more times/yr)
Yes, occasionally (1-2 times/yr)
Yes, rarely (less than 1 time/yr)
No
21. Does the basement have any of the following? (check all that apply) Floor cracks ,
Wall cracks , Sump , Floor drain , Other hole/opening in floor
(describe) _____

22. Are any of the following used or stored in the basement (check all that apply)
 Paint Paint stripper/remover Paint thinner
 Metal degreaser/cleaner Gasoline Diesel fuel Solvents Glue
 Laundry spot removers Drain cleaners Pesticides
23. Have you recently (within the last six months) done any painting or remodeling in your home? Yes No
 If yes, please specify what was done, where in the home, and what month:

24. Have you installed new carpeting in your home within the last year? Yes No
 If yes, when and where? _____
25. Do you regularly use or work in a dry cleaning service (check only one box)?
 Yes, use dry-cleaning regularly (at least weekly)
 Yes, use dry-cleaning infrequently (monthly or less)
 Yes, work at a dry cleaning service
 No
26. Does anyone in your home use solvents at work?
 Yes If yes, how many persons _____
 No If no, go to question 28
27. If yes for question 26 above, are the work clothes washed at home? Yes No
28. Where is the washer/dryer located?
 Basement
 Upstairs utility room
 Kitchen
 Garage
 Use a Laundromat
 Other, please specify _____
29. If you have a dryer, is it vented to the outdoors? Yes No
30. What type(s) of home heating do you have (check all that apply)
 Fuel type: Gas , Oil , Electric , Wood , Coal , Other _____
 Heat conveyance system: Forced hot air
 Forced hot water
 Steam
 Radiant floor heat
 Wood stove
 Coal furnace
 Fireplace
 Other _____

31. Do you have air conditioning? Yes No . If yes, please check the appropriate type(s)
 Central air conditioning
 Window air conditioning unit(s)
 Other , please specify _____
32. Do you use any of the following? Room fans , Ceiling fans , Attic fan
 Do you ventilate using the fan-only mode of your central air conditioning or forced air heating system? Yes No
33. Has your home had termites or other pesticide treatment: Yes No Unknown
 If yes, please specify type of pest controlled, May 2008
 and approximate date of service Inspected yearly 9-27-09
34. Water Heater Type: Gas , Electric , By furnace , Other
 Water heater location: Basement , Upstairs utility room , Garage , Other (please describe) _____
35. What type of cooking appliance do you have? Electric , Gas , Other
36. Is there a stove exhaust hood present? Yes No
 Does it vent to the outdoors? Yes No
37. Smoking in Home:
 None , Rare (only guests) , Moderate (residents light smokers) ,
 Heavy (at least one heavy smoker in household)
38. If yes to above, what do they smoke?
 Cigarettes Cigars
 Pipe Other
39. Do you regularly use air fresheners? Yes No
40. Does anyone in the home have indoor home hobbies of crafts involving: None
 Heating , soldering , welding , model glues , paint , spray paint,
 wood finishing , Other Please specify what type of hobby: _____
41. General family/home use of consumer products (please circle appropriate): Assume that **Never** = never used, **Hardly ever** = less than once/month, **Occasionally** = about once/month, **Regularly** = about once/week, and **Often** = more than once/week.

Product	Frequency of Use				
	Never	Hardly ever	Occasionally	Regularly	Often
Spray-on deodorant	Never				

OCCUPIED DWELLING QUESTIONNAIRE

Indoor Air Assessment Survey

Date: 10-5-2011

1. Name: Rita and Bob Harmick
Address: 1207 Chesaco Ave 2nd Floor
Rosedale, MD 21237
Home Phone: 410- Work Phone: _____
2. What is the best time to call to speak with you? Day At: Work or Home
3. Are you the Owner , Renter , Other (please specify) _____
of this Home/Structure?
4. Total number of occupants/persons at this location? 2
Number of children? _____ Ages? _____
5. How long have you lived at this location? _____

General Home Description

6. Type of Home/Structure (check only one): Single Family Home , Duplex ,
Condominium , Townhouse , Other _____
7. Home/Structure Description: number of floors 2
Basement? Yes No
Crawl Space? Yes No
If Yes, under how much of the house's area? _____ %
8. Age of Home/Structure: _____ years, Not sure/Unknown
9. General Above-Ground Home/Structure construction (check all that apply):
Wood , Brick , Concrete , Cement block , Other _____
10. Foundation Construction (check all that apply):
Concrete slab
Fieldstone
Concrete block

- Elevated above ground/grade
- Other _____
11. What is the source of your drinking water (check all that apply)?
 Public water supply
 Private well
 Bottled water
 Other, please specify _____
12. Do you have a private well for purposes other than drinking?
 Yes No
 If yes, please describe what you use the well
 for: _____
13. Do you have a septic system? Yes No Not used Unknown
14. Do you have standing water outside your home (pond, ditch, swale)? Yes No

Basement Description, please check appropriate boxes.
If you do not have a basement go to question 23.

15. Is the basement finished or unfinished ?
16. If finished, how many rooms are in the basement? 1
 How many are used for more than 2 hours/day? 1
17. Is the basement floor (check all that apply) concrete , tile , carpeted , dirt ,
 other (describe) _____?
18. Are the basement walls poured concrete , cement block , stone , wood , brick ,
 other _____?
19. Does the basement have a moisture problem (check one only)?
 Yes, frequently (3 or more times/yr)
 Yes, occasionally (1-2 times/yr)
 Yes, rarely (less than 1 time/yr)
 No
20. Does the basement ever flood (check one only)?
 Yes, frequently (3 or more times/yr)
 Yes, occasionally (1-2 times/yr)
 Yes, rarely (less than 1 time/yr)
 No
21. Does the basement have any of the following? (check all that apply) Floor cracks ,
 Wall cracks , Sump , Floor drain , Other hole/opening in floor
 (describe) French Drain to Sump

22. Are any of the following used or stored in the basement (check all that apply)
 Paint Paint stripper/remover Paint thinner
 Metal degreaser/cleaner Gasoline Diesel fuel Solvents Glue
 Laundry spot removers Drain cleaners Pesticides
 Shout
23. Have you recently (within the last six months) done any painting or remodeling in your home? Yes No
 If yes, please specify what was done, where in the home, and what month:

24. Have you installed new carpeting in your home within the last year? Yes No
 If yes, when and where? _____
25. Do you regularly use or work in a dry cleaning service (check only one box)?
 Yes, use dry-cleaning regularly (at least weekly)
 Yes, use dry-cleaning infrequently (monthly or less)
 Yes, work at a dry cleaning service
 No
26. Does anyone in your home use solvents at work?
 Yes If yes, how many persons _____
 No If no, go to question 28
27. If yes for question 26 above, are the work clothes washed at home? Yes No
28. Where is the washer/dryer located?
 Basement
 Upstairs utility room
 Kitchen
 Garage
 Use a Laundromat
 Other, please specify _____
29. If you have a dryer, is it vented to the outdoors? Yes No
30. What type(s) of home heating do you have (check all that apply)
 Fuel type: Gas , Oil , Electric , Wood , Coal , Other _____
 Heat conveyance system: Forced hot air
 Forced hot water
 Steam
 Radiant floor heat
 Wood stove
 Coal furnace
 Fireplace
 Other _____

31. Do you have air conditioning? Yes No . If yes, please check the appropriate type(s)
 Central air conditioning
 Window air conditioning unit(s)
 Other , please specify _____
32. Do you use any of the following? Room fans , Ceiling fans , Attic fan
 Do you ventilate using the fan-only mode of your central air conditioning or forced air heating system? Yes No
33. Has your home had termite or other pesticide treatment: Yes No Unknown
 If yes, please specify type of pest controlled, _____
 and approximate date of service 3-4 years ago
34. Water Heater Type: Gas , Electric , By furnace , Other

 Water heater location: Basement , Upstairs utility room , Garage , Other (please describe) _____
35. What type of cooking appliance do you have? Electric , Gas , Other

36. Is there a stove exhaust hood present? Yes No
 Does it vent to the outdoors? Yes No
37. Smoking in Home: 1 pack every 3-4 days - Grandson Philip
 None , Rare (only guests) , Moderate (residents light smokers) ,
 Heavy (at least one heavy smoker in household)
38. If yes to above, what do they smoke?
 Cigarettes Cigars
 Pipe Other
39. Do you regularly use air fresheners? Yes No
40. Does anyone in the home have indoor home hobbies of crafts involving: None
 Heating , soldering , welding , model glues , paint , spray paint,
 wood finishing , Other Please specify what type of hobby: _____
41. General family/home use of consumer products (please circle appropriate): Assume that
Never = never used, **Hardly ever** = less than once/month, **Occasionally** = about
 once/month, **Regularly** = about once/week, and **Often** = more than once/week.

Product	Frequency of Use
Spray-on deodorant	<u>Never</u> Hardly ever Occasionally Regularly Often

Aerosol deodorizers	<u>Never</u>	Hardly ever	Occasionally	Regularly	Often
Insecticides	<u>Never</u>	Hardly ever	Occasionally	Regularly	Often
Disinfectants	<u>Never</u>	Hardly ever	Occasionally	Regularly	Often

(Question 41, continued)

<u>Product</u>	<u>Frequency of Use</u>				
Window cleaners	Never	Hardly ever	<u>Occasionally</u>	Regularly	Often
Spray-on oven cleaners	<u>Never</u>	Hardly ever	Occasionally	Regularly	Often
Nail polish remover	<u>Never</u>	Hardly ever	Occasionally	Regularly	Often
Hair sprays	<u>Never</u>	Hardly ever	Occasionally	Regularly	Often

42. Please check weekly household cleaning practices:

- Dusting *2-3 months*
- Dry sweeping *weekly*
- Vacuuming *weekly*
- Polishing (furniture, etc) *NO*
- Washing/waxing floors *NO waxing Water wash*
- Other _____

43. Other comments: _____

Aerosol deodorizers	Never	Hardly ever	Occasionally	Regularly	Often
Insecticides	Never	Hardly ever	Occasionally	Regularly	Often
Disinfectants	Never	Hardly ever	Occasionally	Regularly	Often

(Question 41, continued)

<u>Product</u>	<u>Frequency of Use</u>				
Window cleaners	Never	Hardly ever	Occasionally	Regularly	Often
Spray-on oven cleaners	Never	Hardly ever	Occasionally	Regularly	Often
Nail polish remover	Never	Hardly ever	Occasionally	Regularly	Often
Hair sprays	Never	Hardly ever	Occasionally	Regularly	Often

42. Please check weekly household cleaning practices:

- Dusting
- Dry sweeping
- Vacuuming
- Polishing (furniture, etc)
- Washing/waxing floors
- Other _____

43. Other comments: _____

ATTACHMENT C

1207 Chesaco Avenue Indoor Air Quality (IAQ) Analytical Results
Gasoline Fueling Station – Royal Farms #64
7950 Pulaski Highway, Rosedale, MD 21237

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
IAQ-01	8/20/2010	2.71	4.56	0.87 U	1.7 U	0.72 U	1.4
	4/26/2011	1.05	3.08	0.87 U	1.7 U	0.72 U	1.1 U
	7/20/2011	5.02	5.80	0.97	3.65	0.72 U	2.98
	10/6/2011	1.74	4.09	0.87 U	1.7 U	0.72 U	3.04
	3/23/2012	2.40	6.82	0.87 U	2.43	0.72 U	1.1 U
IAQ -01A	3/23/2012	2.36	6.44	0.87 U	2.39	0.72 U	1.1 U
IAQ-02	8/20/2010	2.00	4.88	0.87 U	1.7 U	0.72 U	1.2
	4/26/2011	1.08	2.03	0.87 U	1.7 U	0.72 U	1.1 U
	7/20/2011	2.23	4.31	0.90	3.97	0.72 U	1.32
	10/6/2011	1.39	2.68	0.87 U	1.7 U	0.72 U	1.75
	3/23/2012	2.24	6.75	0.91	2.82	0.72 U	1.1 U
IAQ-03	8/20/2010	2.72	9.96	0.87 U	2.60	0.72 U	1.1 U
	4/26/2011	1.03	7.78	0.87 U	1.7 U	0.72 U	1.1 U
	7/20/2011	3.45	10.70	1.11	4.52	0.72 U	2.60
	10/6/2011	14.00	41.90	3.49	10.10	0.72 U	6.36
	3/23/2012	4.86	17.80	1.56	5.82	0.72 U	1.1 U
IAQ -03A	3/23/2012	4.19	15.30	1.39	5.08	0.72 U	1.1 U
AA-01	8/20/2010	1.16	3.32	0.87 U	1.7 U	0.72 U	1.1 U
	4/26/2011	0.64 U	1.07	0.87 U	1.7 U	0.72 U	1.1 U
	7/20/2011	0.81	2.85	0.87 U	1.7 U	0.72 U	1.1 U
	10/6/2011	0.64U	2.73	0.87 U	1.7 U	0.72 U	1.38
	3/23/2012	1.82	5.8	0.87 U	2.04	0.72 U	1.1 U
SV-01	3/23/2012	10.2	9.69	1.00	4.69	0.72 U	1.1 U
SV-02	3/23/2012	1.47	2.26	1.74 U	3.4 U	1.44 U	2.2 U

All results reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

L = suspect artifact

U = less than reported quantitation limit

B = detected in laboratory blank

IAQ-01 located in basement near bathroom

IAQ-01A located in basement near bottom of stairs

IAQ-02 located in 1st floor dining room

IAQ-03 located in 2nd floor dining room

IAQ -03A located in 2nd floor living room

AA-01 located outside of basement door which was in down wind direction

SV-01 located in basement near sump

SV-02 located in basement near bathroom

**1207 Chesaco Avenue Indoor Air Quality Attenuation Factors
Gasoline Fueling Station – Royal Farms #64
7950 Pulaski Highway, Rosedale, MD 21237**

Sample ID	Benzene	Toluene	Ethylbenzene	Xylenes
IAQ-01	0.24	0.7	NA	0.51
IAQ -01A	0.23	0.66	NA	0.52
IAQ-02	0.22	0.7	0.91	0.6
IAQ-03	0.48	1.84	1.56	1.24
IAQ -03A	0.41	1.58	1.39	1.08

Sub-slab data from sample SV-01 used (10.2 ug/m3).

**1207 Chesaco Avenue Sump Water Quality Analytical Results
 Gasoline Fueling Station – Royal Farms #64
 7950 Pulaski Highway, Rosedale, MD 21237**

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	TPH GRO	TPH DRO
Sump 1207	12/23/2009	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	3/25/2012	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

TPH GRO and DRO results in parts per million or mg/L

BTEX and MTBE results in parts per billion or µg/L

BDL = Below Detection Limits

B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene

MTBE = Methyl-tert-butyl-ether

TPH GRO = Total Petroleum Hydrocarbons Gasoline Range Organics

TPH DRO = Total Petroleum Hydrocarbons Diesel Range Organics

NS = Not Sampled

Some compounds may have been detected but are not tabulated on this spreadsheet.

See laboratory analytical results reports for full results.

J Denotes Estimated Value