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November 10, 2011 Reference No. 18631

Ms. Ruth Curley
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1011

Dear Ms. Curley:

Re: Soil Vapor Intrusion Evaluation
Von Roll Isola USA, Inc. Riverview Facility
Schenectady, New York

As per the Supplemental Investigation Work Plan (June 1, 2011) (Work Plan), a soil vapor intrusion investigation was conducted at the Von Roll Isola USA, Inc. (VRI) Riverview Facility (Site) on August 21, 2011. The purpose of the investigation is to evaluate the potential, if any, for soil vapor intrusion into the office areas at the Site.

SAMPLE LOCATIONS

A total of eight soil gas probes were installed at the locations shown on Plan 1. The soil vapor probe locations consisted of the following:

- Three outdoor office area locations at the east side of Building No. 14 (SG-14-1, SG-14-2, and SG-14-3)
- Two outdoor office area locations on the east corner of Building No. 31 (SG-31-1 and SG-31-2)
- Three outdoor office area locations at the east side of Building No. 33 (SG-33-1, SG-33-2, and SG-33-3)

Probe Construction

Soil vapor probes were placed approximately 10 feet from the building, to avoid any fill material around the buildings. The probes were set at 7.0 feet below ground surface (bgs), which placed the sampling interval immediately below the building foundation and granular base.

The soil vapor probes were constructed as per the approved Work Plan, and as shown on the field logs presented in Attachment 1 of this letter. The soil vapor probe construction details are presented in Table 1. All soil vapor probes were installed using direct-push methods. The boreholes were advanced using 1.25-inch diameter drill rods with an expendable drive point holder and an expendable drive point to the target depth. The well screen (6-inch stainless steel) with the sample tubing (⅛-inch diameter polyethylene) attached was placed down into the drive rods to the top of the drive point and threaded to the drive point. As shown in Table 1 and described above, the well screen was set at the bottom of each borehole and the

borehole was filled with sand to 0.5 foot above the top of the screen, followed by 5 feet of bentonite (installed to 1 foot bgs), and an additional 0.5 foot of sand placed above that. The locations were finished with a concrete 5-inch diameter curb box set flush to the ground surface.

Drilling and sampling equipment were decontaminated, as required, by washing with an Alconox detergent solution and rinsing with distilled water.

SOIL VAPOR SAMPLING METHODOLOGY

Soil vapor samples were collected on August 21, 2011 in accordance with the "Soil Vapor Probe Construction and Sampling Details" outlined in Attachment 1of the approved Work Plan.

The soil vapor samples were collected using 6-liter capacity Summa™ canisters fitted with a laboratory calibrated critical orifice flow regulation device sized to allow the collection of the soil gas samples over a 24-hour sample collection time.

Prior to sample collection, soil vapor probes were purged at a maximum flow rate of 0.1 liter per minute (L/min). A three-way valve with all valves initially closed was connected to the probe sample point, to the portable vacuum pump, and to the top of the regulator of the Summa™ canister. The Summa™ canister has a regulator on top of the canister with a valve in between the canister and the regulator. This canister valve is also initially closed as supplied by the laboratory. A maximum of three soil vapor probe "dead volumes" were purged to remove potentially stagnant air from the internal volume of the soil vapor probe and to ensure that soil vapor representative of the formation was drawn into the soil vapor probe. The soil vapor probe "dead volumes" were calculated based on field measurements of probe construction (e.g., below ground tubing length, tubing inner diameter, and sand pack length indicated in the soil vapor probe stratigraphic logs) and aboveground sampling equipment. After purging was complete, the valve to the portable vacuum pump was closed and the canister valve (in between the canister and regulator) was opened to begin sampling. The regulator was calibrated for a 24-hour sampling period by the laboratory.

Soil vapor samples for volatile organic compounds (VOCs) were analyzed at TestAmerica, Knoxville using the United States Environmental Protection Agency's (USEPA's) TO-15 gas chromatograph/mass spectrometer (GC/MS) methodology. TestAmerica, Knoxville has appropriate Environmental Laboratory Approval Program (ELAP) certification, as specified in New York State Department of Health (NYSDOH) guidance "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" October 2006 (SVI Guidance).

Quality Control/Quality Assurance (QC/QA) measures implemented during soil vapor sampling events included maintaining a minimum residual negative pressure in the Summa™

canisters of approximately 1 to 5 inches of mercury. One field duplicate sample was collected from location SG-33-2.

SOIL VAPOR INTRUSION EVALUATION

The soil vapor sample results are presented in Table 2. In accordance with the Work Plan, the soil vapor results were compared to the NYSDOH criteria as outlined in the SVI Guidance.

The seven compounds having NYSDOH SVI Guidance criteria are as follows (shown with the Soil Vapor/Indoor Air Matrix that they are each applied to):

SVI Guidance Compound	*Soil Vapor/Indoor Air Matrix*
Trichloroethene	Matrix 1
Carbon tetrachloride	Matrix 1
Vinyl Chloride	Matrix 1
1,1,1-Trichloroethane	Matrix 2
Tetrachloroethene	Matrix 2
cis-1,2-Dichloroethene	Matrix 2
1,1-Dichloroethene	Matrix 2

Although the NYSDOH SVI Guidance criteria are applicable to Indoor Air (IA) and Sub-Slab (SS) vapor results, a conservative evaluation was completed by substituting the SS data with the soil vapor data. The discrete soil vapor samples results for each Building location were averaged to estimate the potential SS vapor concentration. The calculated SS vapor concentrations were then compared to the NYSDEC matrix tables, as appropriate.

The NYSDOH SVI Guidance decision matrices table lists the following possible actions, dependent upon the application of the SS data and IA data to the Matrix:

- No further action
- Take reasonable and practical actions to identify source(s) and reduce exposures
- Monitor
- Monitor/Mitigate
- Mitigate

For reference, NYSDOH SVI Guidance Matrix 1 and Matrix 2 are presented in Attachment 2.

Building 14

The soil vapor samples from Building 14 detected two compounds having NYSDOH SVI Guidance values, carbon tetrachloride and tetrachloroethene (PCE). Carbon tetrachloride was detected at concentrations of 2.7 micrograms per cubic meter (µg/m3) (SG-14-1) and 7.4 µg/m3 (SG-14-2) and non-detect at a detection limit of 2.5 (SG-14-3). PCE was detected at a concentration of 17 µg/m3 (SG-14-2) and non-detect at a detection limit of 2.5 (SG-14-1 and SG-14-3). The concentrations of carbon tetrachloride and PCE were averaged for the application to the NYSDOH SVI Guidance decision matrices, assuming a value of one-half the detection limit for non-detect results. Therefore, an average SS concentration of 3.78 µg/m^3 was used for carbon tetrachloride and an average concentration of 7.47 µg/m^3 was used for PCE for the comparison of these compounds to the NYSDOH SVI Guidance decision matrices.

As shown in the SVI Guidance Compound table above, carbon tetrachloride is applied to Matrix 1 of the NYSDOH SVI Guidance and PCE is applied to Matrix 2. Applying the SS vapor concentrations of 3.78 µg/m^3 for carbon teatrachloride and 7.47 µg/m^3 for PCE to the decision matrices places the reviewer on the first row of the decision matrices. For the first row of the decision matrices, regardless of the indoor air concentration, the only guideline determinations that are applicable based on the application of the SS data are: (i) "no further action" or (ii) "take reasonable and practical action to identify source(s) and reduce exposures."

Building 31

The soil vapor samples from Building 31 identified the presence PCE as the only compound having detectable NYSDOH SVI Guidance values. PCE was detected at a concentration of 5.7 µg/m3 (SG-31-2) and non-detect at a detection limit of 5.4 (SG-31-1). The PCE concentrations were averaged for the application to the NYSDOH SVI Guidance decision matrix, assuming a value of one-half the detection limit for non-detect results. Therefore, a concentration of 4.20 µg/m^3 was used for comparison of PCE to the NYSDOH SVI Guidance decision matrix.

As shown in the SVI Guidance Compound table above, PCE is applied to Matrix 2. Applying the same comparison evaluation as followed previously for Building 14, the decision matrix evaluation leads to a similar determination; specifically either "no further action" or "take reasonable and practical action to identify source(s) and reduce exposures". This matrix outcome is applicable regardless of the indoor air results.

Building 33

None of the seven NYSDOH SVI Guidance parameters was detected in the soil vapor samples for Building 33; therefore, an application of non-detect to the decision matrices results in a determination of "no further action" for this location.

SUMMARY

Based on the evaluation presented herein, the application of the soil vapor data to the NYSDOH SVI Guidance decision matrices indicates the more conservative action to take at Buildings 14 and 31 is "take reasonable and practical actions to identify source(s) and reduce exposures."

The NYSDOH SVI Guidance for Matrix 1 and Matrix 2 indicates that, in cases where the concentrations result in an action of "take reasonable and practical actions to identify source(s) and reduce exposures", the concentrations in the indoor air, if any, are "likely due to indoor air/or outdoor sources rather than soil vapor intrusion" (refer to Soil Vapor/Indoor Air Matrix 1 and Matrix 2 tables in the NYSDOH SVI Guidance). Upon an evaluation of the facility and based upon the soil vapor results, it is not necessary to collect IA samples since any detection of these compounds in the IA, if present, are not likely due to soil vapor intrusion .

Further, the past and current NYSDEC-approved RI activities at the Site are sufficient to address the NYSDOH SVI Guidance requirement to "take reasonable and practical actions to identify source(s)". Soil and groundwater samples have been collected in the vicinity of Building 14 and groundwater samples have been collected in the vicinity of Building 31. Carbon tetrachloride and PCE were not detected in any of these samples at concentrations above NYSDEC standards or criteria that would require remedial action.

Since the potential presence of these compounds in the IA, based upon the RI data and the VI assessment, would not be due to soil vapor intrusion, the present VI evaluation supports a determination of no further action for the soil and groundwater at the facility to address any potential exposure concern via the SVI pathway.

Please feel free to contact me at (519) 884-0510 with any questions or comments you may have.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Jamie Puskas
JP/ck/2

Encl.
c.c. John Uruskyj, GE

NO	Revision	Date	Initial

LEGEND

- GT-12 — EXISTING GROUND WATER MONITORING WELL
- VRI-1 — 2001 GROUNDWATER MONITORING WELL
- PROPOSED SHALLOW MONITORING WELL LOCATION (LOCATIONS TO BE FINALIZED BASED ON SOIL VAPOR SURVEY RESULTS)
- SOIL VAPOR SURVEY SAMPLING LOCATION
- SOIL VAPOR MONITORING PROBE
- MONITORING WELL TO BE SAMPLED
- SMH — MANHOLE
- CB — CATCH BASIN
- PROPERTY BOUNDARY LINE
- CHAIN LINK FENCE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

VRI-RIVERVIEW FACILITY
Schenectady, New York

CONESTOGA-ROVERS & ASSOCIATES

Source References

Project Manager:	Reviewed By:	Date:	
J.K.P.		SEPTEMBER 2011	
Scale: AS SHOWN	Project N°: 18631-50	Report N°: PRES005	Drawing N°: PLAN 1

18631-50(PRES005)GN-WA001 SEP 09/2011

TABLE 1

SOIL VAPOR CONSTRUCTION TABLE
SOIL VAPOR INTRUSION SAMPLING
VRI-RIVERVIEW FACILITY
AUGUST 2011

Vapor Probe ID	*Date Installed*	*Method*	*Bore-hole depth (ft bgs)*	*Well screen length (ft)*	*Depth of Sand (ft bgs)*	*Depth of Bentonite (ft*	*Depth of Sand (ft bgs)*	*Curb Box (ft bgs)*	*Distance from Building (ft)*
SG-14-1	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	NA	Surface to 1.0	10.0
SG-14-2	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	10.1
SG-14-3	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	9.3
SG-31-1	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	9.9
SG-31-2	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	9.9
SG-33-1	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	5.8
SG-33-2	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	7.2
SG-33-3	8/4/2011	direct push	7.0	0.5	6.0 to 7.0	1.0 to 6.0	0.5 to 1.0	Surface to 0.5	5.5

Notes:
ft bgs: Feet Below Ground Surface.
NA: Sand not Installed.

TABLE 2

ANALYTICAL RESULTS SUMMARY
SOIL VAPOR INTRUSION SAMPLING
VRI-RIVERVIEW FACILITY
AUGUST 2011

Sample Location:		*SG-14-1*	*SG-14-2*	*SG-14-3*	*SG-31-1*	*SG-31-2*
Sample ID:		*SG-18631-081211-BP-001*	*SG-18631-081211-BP-002*	*SG-18631-081211-BP-003*	*SG-18631-081211-BP-004*	*SG-18631-081211-BP-005*
Sample Date:		*8/12/2011*	*8/12/2011*	*8/12/2011*	*8/12/2011*	*8/12/2011*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
1,1,2,2-Tetrachloroethane	µg/m3	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
1,1,2-Trichloroethane	µg/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
1,1-Dichloroethane	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
1,1-Dichloroethene	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
1,2,4-Trichlorobenzene	µg/m3	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
1,2,4-Trimethylbenzene	µg/m3	6.1	14	4.0	3.9 U	3.9 U
1,2-Dibromoethane (Ethylene dibromide)	µg/m3	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
1,2-Dichlorobenzene	µg/m3	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
1,2-Dichloroethane	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
1,2-Dichloropropane	µg/m3	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
1,2-Dichlorotetrafluoroethane (CFC 114)	µg/m3	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U
1,3,5-Trimethylbenzene	µg/m3	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U
1,3-Dichlorobenzene	µg/m3	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
1,4-Dichlorobenzene	µg/m3	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
1,4-Dioxane	µg/m3	7.2 U	7.2 U	7.2 U	7.2 U	7.2 U
2,2,4-Trimethylpentane	µg/m3	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m3	10	14	9.4 U	9.4 U	9.4 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/m3	8.2 U	8.2 U	8.2 U	8.2 U	8.2 U
Benzene	µg/m3	2.7	2.6 U	2.6 U	2.6 U	2.6 U
Benzyl chloride	µg/m3	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U
Bromodichloromethane	µg/m3	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Bromoform	µg/m3	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U
Bromomethane (Methyl bromide)	µg/m3	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Carbon tetrachloride	µg/m3	2.7	7.4	2.5 U	2.5 U	2.5 U
Chlorobenzene	µg/m3	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
Chloroethane	µg/m3	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Chloroform (Trichloromethane)	µg/m3	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U
Chloromethane (Methyl chloride)	µg/m3	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U
cis-1,2-Dichloroethene	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
cis-1,3-Dichloropropene	µg/m3	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U
Cyclohexane	µg/m3	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U
Dibromochloromethane	µg/m3	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U
Dichlorodifluoromethane (CFC-12)	µg/m3	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Ethanol	µg/m3	56	37	24	15 U	26
Ethylbenzene	µg/m3	6.2	13	3.7	6.2	4.7
Hexachlorobutadiene	µg/m3	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U
Hexane	µg/m3	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U

TABLE 2

ANALYTICAL RESULTS SUMMARY
SOIL VAPOR INTRUSION SAMPLING
VRI-RIVERVIEW FACILITY
AUGUST 2011

Sample Location:		*SG-14-1*	*SG-14-2*	*SG-14-3*	*SG-31-1*	*SG-31-2*
Sample ID:		*SG-18631-081211-BP-001*	*SG-18631-081211-BP-002*	*SG-18631-081211-BP-003*	*SG-18631-081211-BP-004*	*SG-18631-081211-BP-005*
Sample Date:		*8/12/2011*	*8/12/2011*	*8/12/2011*	*8/12/2011*	*8/12/2011*
Parameters	***Units***					
Isopropyl benzene	µg/m3	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
m&p-Xylenes	µg/m3	20	47	13	18	15
Methyl tert butyl ether (MTBE)	µg/m3	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U
Methylene chloride	µg/m3	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U
Naphthalene	µg/m3	10 U	10 U	10 U	10 U	10 U
N-Propylbenzene	µg/m3	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
o-Xylene	µg/m3	6.2	16	4.2	4.6	4.0
Styrene	µg/m3	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
tert-Butyl alcohol	µg/m3	17	17	13	9.7 U	9.7 U
Tetrachloroethene	µg/m3	5.4 U	17	5.4 U	5.4 U	5.7
Toluene	µg/m3	18	29	18	22	18
trans-1,2-Dichloroethene	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
trans-1,3-Dichloropropene	µg/m3	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U
Trichloroethene	µg/m3	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Trichlorofluoromethane (CFC-11)	µg/m3	5.1	4.5 U	4.5 U	4.7	6.9
Trifluorotrichloroethane (Freon 113)	µg/m3	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U
Vinyl chloride	µg/m3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes:
µg/m3 - Micrograms per Cubic Meter.
U - Concentration is Non-Detect at Associated Value.

TABLE 2

ANALYTICAL RESULTS SUMMARY
SOIL VAPOR INTRUSION SAMPLING
VRI-RIVERVIEW FACILITY
AUGUST 2011

Sample Location:		*SG-33-1*	*SG-33-2*	*SG-33-2*	*SG-33-3*
Sample ID:		*SG-18631-081211-BP-006*	*SG-18631-081211-BP-007*	*SG-18631-081211-BP-009*	*SG-18631-081211-BP-008*
Sample Date:		*8/12/2011*	*8/12/2011*	*8/12/2011*	*8/12/2011*
				Duplicate	
Parameters	*Units*				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/m3	4.4 U	4.4 U	4.4 U	4.4 U
1,1,2,2-Tetrachloroethane	µg/m3	5.5 U	5.5 U	5.5 U	5.5 U
1,1,2-Trichloroethane	µg/m3	4.4 U	4.4 U	4.4 U	4.4 U
1,1-Dichloroethane	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U
1,1-Dichloroethene	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U
1,2,4-Trichlorobenzene	µg/m3	5.9 U	5.9 U	5.9 U	5.9 U
1,2,4-Trimethylbenzene	µg/m3	6.3	7.0	6.1	3.9 U
1,2-Dibromoethane (Ethylene dibromide)	µg/m3	6.1 U	6.1 U	6.1 U	6.1 U
1,2-Dichlorobenzene	µg/m3	4.8 U	4.8 U	4.8 U	4.8 U
1,2-Dichloroethane	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U
1,2-Dichloropropane	µg/m3	3.7 U	3.7 U	3.7 U	3.7 U
1,2-Dichlorotetrafluoroethane (CFC 114)	µg/m3	5.6 U	5.6 U	5.6 U	5.6 U
1,3,5-Trimethylbenzene	µg/m3	3.9 U	3.9 U	3.9 U	3.9 U
1,3-Dichlorobenzene	µg/m3	4.8 U	4.8 U	4.8 U	4.8 U
1,4-Dichlorobenzene	µg/m3	4.8 U	4.8 U	4.8 U	4.8 U
1,4-Dioxane	µg/m3	7.2 U	7.2 U	7.2 U	7.2 U
2,2,4-Trimethylpentane	µg/m3	9.3 U	9.3 U	9.3 U	9.3 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m3	9.4 U	9.4 U	9.4 U	9.4 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/m3	8.2 U	8.2 U	8.2 U	8.2 U
Benzene	µg/m3	2.6 U	2.6 U	2.6 U	2.6 U
Benzyl chloride	µg/m3	8.3 U	8.3 U	8.3 U	8.3 U
Bromodichloromethane	µg/m3	5.4 U	5.4 U	5.4 U	5.4 U
Bromoform	µg/m3	8.3 U	8.3 U	8.3 U	8.3 U
Bromomethane (Methyl bromide)	µg/m3	3.1 U	3.1 U	3.1 U	3.1 U
Carbon tetrachloride	µg/m3	2.5 U	2.5 U	2.5 U	2.5 U
Chlorobenzene	µg/m3	3.7 U	3.7 U	3.7 U	3.7 U
Chloroethane	µg/m3	2.1 U	2.1 U	2.1 U	2.1 U
Chloroform (Trichloromethane)	µg/m3	13	3.9 U	3.9 U	3.9 U
Chloromethane (Methyl chloride)	µg/m3	4.1 U	4.1 U	4.1 U	4.1 U
cis-1,2-Dichloroethene	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U
cis-1,3-Dichloropropene	µg/m3	3.6 U	3.6 U	3.6 U	3.6 U
Cyclohexane	µg/m3	6.9 U	6.9 U	6.9 U	6.9 U
Dibromochloromethane	µg/m3	6.8 U	6.8 U	6.8 U	6.8 U
Dichlorodifluoromethane (CFC-12)	µg/m3	3500	2700	2200	3700
Ethanol	µg/m3	48	15 U	15 U	15 U
Ethylbenzene	µg/m3	7.0	9.5	8.4	5.1
Hexachlorobutadiene	µg/m3	8.5 U	8.5 U	8.5 U	8.5 U
Hexane	µg/m3	7.0 U	7.0 U	7.0 U	7.0 U

TABLE 2

ANALYTICAL RESULTS SUMMARY
SOIL VAPOR INTRUSION SAMPLING
VRI-RIVERVIEW FACILITY
AUGUST 2011

Sample Location:		*SG-33-1*	*SG-33-2*	*SG-33-2*	*SG-33-3*
Sample ID:		*SG-18631-081211-BP-006*	*SG-18631-081211-BP-007*	*SG-18631-081211-BP-009*	*SG-18631-081211-BP-008*
Sample Date:		*8/12/2011*	*8/12/2011*	*8/12/2011*	*8/12/2011*
				Duplicate	
Parameters	***Units***				
Isopropyl benzene	µg/m3	7.9 U	7.9 U	7.9 U	7.9 U
m&p-Xylenes	µg/m3	24	36	31	17
Methyl tert butyl ether (MTBE)	µg/m3	5.8 U	5.8 U	5.8 U	5.8 U
Methylene chloride	µg/m3	6.9 U	6.9 U	6.9 U	6.9 U
Naphthalene	µg/m3	10 U	10 U	10 U	10 U
N-Propylbenzene	µg/m3	7.9 U	7.9 U	7.9 U	7.9 U
o-Xylene	µg/m3	7.4	9.5	8.2	4.5
Styrene	µg/m3	3.4 U	3.4 U	3.4 U	3.4 U
tert-Butyl alcohol	µg/m3	17	11	9.7 U	9.7 U
Tetrachloroethene	µg/m3	5.4 U	5.4 U	5.4 U	5.4 U
Toluene	µg/m3	15	20	19	16
trans-1,2-Dichloroethene	µg/m3	3.2 U	3.2 U	3.2 U	3.2 U
trans-1,3-Dichloropropene	µg/m3	3.6 U	3.6 U	3.6 U	3.6 U
Trichloroethene	µg/m3	2.1 U	2.1 U	2.1 U	2.1 U
Trichlorofluoromethane (CFC-11)	µg/m3	8.6	5.4	4.8	6.2
Trifluorotrichloroethane (Freon 113)	µg/m3	6.1 U	6.1 U	6.1 U	6.1 U
Vinyl chloride	µg/m3	2.0 U	2.0 U	2.0 U	2.0 U

Notes:
µg/m3 - Micrograms per Cubic Meter.
U - Concentration is Non-Detect at Associated Value.

ATTACHMENT 1

STRATIGRAPHIC AND INSTRUMENTATION LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-14-1
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	Soil Vapor Probe	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 8805.93 EASTING: 8009.67 GROUND SURFACE	340.58						
	TOP SOIL, 0-3" topsoil with grass roots and gravel		Curb Box with Concrete					
	SP-SM, 3"-7", silty sand, light brown	340.33						
	SP, 7"-4', brown sand, fine/medium grain, dry/moist	340.03	Sand					
1								
2						3.0		0.3
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4	SP, 4'-7', brown, fine/medium grain, loose, dry/moist	336.58						
5						2.3		0.0-0.3
6			Sampling Zone with Coarse Sand					
			6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 018631-VAPORPROBES.GPJ CRA_CORP.GDT 11/8/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-14-2
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 8845.55 EASTING: 8010.67 GROUND SURFACE	340.33						
	ASPHALT, 0-3"							
	SP, 3"-4' dark brown sand, fine/medium grain, loose	340.08	Curb Box with Concrete; Sand					
1								
2						2.8		0.3
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4	SP, 4'-7' brown sand, fine/medium grain, dry/moist, loose	336.33						
5						2.5		0.1-0.2
6			Sampling Zone with Coarse Sand 6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 018631-VAPORPROBES.GPJ CRA_CORP.GDT 11/8/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-14-3
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	Soil Vapor Probe	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 8857.6 EASTING: 7944.91 GROUND SURFACE	340.32						
	TOPSOIL, 0-3" topsoil		Curb Box with Concrete					
	SP, 3"-4' sand, fine/medium grained, loose, brown, traces of coarse sand	340.07	Sand					
1								
2						2.5		0.1-0.3
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4	SP, 4'-7' sand, dry/moist, loose, brown, trace coarse sand	336.32						
5						2.3		0.1-0.2
6			Sampling Zone with Coarse Sand 6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 018631-VAPORPROBES.GPJ CRA_CORP.GDT 11/8/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-31-1
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

NORTHING: 9286.63
EASTING: 7508.6

GROUND SURFACE ELEV. ft: 340.49

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft
0	SP-SM, 0-4', silty sand, loose, moist	
4	SP-SM, 4' -4.9' silty sand	336.49
4.9	SP, 4.9'-7', sand, no silt, fine/medium grained, dry/moist No water in hole	335.59

Soil Vapor Probe: Curb Box with Concrete; Sand; 1/8" Polyethylene SampleTubing; Bentonite Seal; Sampling Zone with Coarse Sand; 6" Slotted Screen

SAMPLE NUMBER	INTERVAL	REC (ft)	'N' VALUE	PID (ppm)
		2.3		0.0-0.1
		3.0		0.1-0.2

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 018631-VAPORPROBES.GPJ CRA_CORP.GDT 11/8/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-31-2
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	Soil Vapor Probe	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 9256.32 EASTING: 7522.71 GROUND SURFACE	340.53						
	TOPSOIL, 0-3", topsoil		Curb Box with Concrete					
	SP, 3"- 4' , light brown sand, fine/medium grain, loose, dry/moist	340.28	Sand					
1								
2						2.5		0.1-0.2
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4	SP-SM, 4-7', silty sand, finely graded, dry/moist, slightly dense	336.53						
5								
						2.3		0.1-0.2
6			Sampling Zone with Coarse Sand 6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 018631-VAPORPROBES.GPJ CRA_CORP.GDT 11/8/11

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-33-1
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	Soil Vapor Probe	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 9169.75 EASTING: 7088.82 GROUND SURFACE	342.68						
0	SP-SM, 0-20", dark brown silt, little sand, dense, traces of gravel @ 20"		Curb Box with Concrete Sand					
1								
		341.18						
	SP, 1.5-4', light brown sand, fine/medium grain, loose, dry/moist					2.5		0.0
2								
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4		338.68						
	SP, light brown sand, fine/medium grain, loose, dry/moist							
5						2.1		0.3-0.5
6			Sampling Zone with Coarse Sand 6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-33-2
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	Soil Vapor Probe	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 9176.83 EASTING: 7141.24 GROUND SURFACE	342.14						
	TOPSOIL, 0-3", topsoil	341.89	Curb Box with Concrete					
	SP, 3"-9", sand, light brown, loose, fine/medium grain, dry/moist							
	SP-SM, 9"- 4', silty sand, fine/medium grain, gravel, moist	341.39	Sand					
1								
2						2.2		0.1
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4	SP, 4'-7', light brown sand, fine/medium grain, loose, dry/moist	338.14						
5						2.8		0.1-0.2
6			Sampling Zone with Coarse Sand 6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: VRI-RIVERVIEW
PROJECT NUMBER: 018631
CLIENT: General Electric
LOCATION: Schenectady

HOLE DESIGNATION: SG-33-3
DATE COMPLETED: August 4, 2011
DRILLING METHOD: Direct Push
FIELD PERSONNEL: Kevin Lynch

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	Soil Vapor Probe	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	NORTHING: 9215.28 EASTING: 7107.27 GROUND SURFACE	341.21						
	TOPSOIL, 0-3", topsoil		Curb Box with Concrete					
	SP-SM, 3"-9", dark brown silty sand, blocky, med dense	340.96						
	SP, 9"-4', brown sand, some gravel, fine/medium grain, loose, dry/moist	340.46	Sand					
1								
2								0.1
			1/8" Polyethylene Sample Tubing					
3								
			Bentonite Seal					
4	SP, 4'-7', brown, fine/medium grain, loose, dry/moist	337.21						
5								0.0
6			Sampling Zone with Coarse Sand 6" Slotted Screen					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 018631-VAPORPROBES.GPJ CRA_CORP.GDT 11/8/11

ATTACHMENT 2

NYSDOH SVI GUIDANCE
MATRIX 1 AND 2

Soil Vapor / Indoor Air Matrix 1

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.25	0.25 to < 1	1 to < 5.0	5.0 and above
< 5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR / MITIGATE	11. MITIGATE	12. MITIGATE
250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

Soil Vapor / Indoor Air Matrix 2

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
100 to < 1,000	5. MONITOR	6. MONITOR / MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.