O'BRIEN & GERE

January 26, 2007

Mr. Frank Sowers, P.E.
New York State Department of Environmental Conservation
Region 8
6274 East Avon-Lima Road
Avon, NY 14414-9519

Re: RI Phase II Vapor Intrusion Work Plan
Former ITT Rochester Form Machine Facility
Site #8-28-112
Town of Gates, Monroe County
Order on Consent: Index # B8-0614-02-05

File: 3356/35273 #2

Dear Mr. Sowers:

A Remedial Investigation/Feasibility Study (RI/FS) is being performed pursuant to the Order on Consent (B8-0614-02-05) between the New York State Department of Environmental Conservation (NYSDEC) and ITT Corporation (ITT) dated August 19, 2003 (effective August 29, 2003) (Consent Order). The RI/FS Work Plan (May 2004) was approved by the NYSDEC in June 2004. The RI activities are documented in the May 2004 RI/FS Work Plan. Implementation of the RI/FS Work Plan began in 2004 and 2005. Upon completion of these RI activities additional data needs were identified. Additional investigations, including off-Site vapor intrusion (VI) sampling, are considered necessary by the NYSDEC to permit completion of the RI. A RI Phase II Work Plan Addendum is currently being prepared for submittal to the NYSDEC.

The schedule for the submittal of RI Phase II Work Plan Addendum may prevent completion of the off-Site VI sampling (Cinemark sampling) during the current heating season. In order to obtain approval for the VI sampling and complete the sampling during the current heating season, the RI Phase II VI sampling scope of work and procedures are presented in this letter work plan for NYSDEC review, comment and approval.

Some aspects of the RI Phase II VI Work Plan presented in this letter are the same as the original RI FS Work Plan dated May 2004 (RI/FS Work Plan, May 2004) and approved by NYSDEC on June 17, 2004. In the interest of keeping this RI Phase II VI Work Plan succinct, the original RI/FS Work Plan (May 2004) will be referenced rather than repeated in this letter. The original RI FS Work Plan will be relied upon for those activities and this letter sampling plan will note where this occurs.

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Site Background

Location and Description

A Modification to the Consent Order, effective November 2, 2006, changed the formal Site name from ITT Automotive, Inc. to Former ITT Rochester Form Machine Facility Site (Site # 8-28-112) in Town of Gates, New York, and substituted ITT Corporation as the Respondent in place of ITT Automotive, Inc. The ITT property is considered the Site for purposes of the RI. The adjacent former Alliance Metal Stamping and Fabricating (AMSF) property and the Cinemark property are presently considered off-Site properties for purposes of the RI. However, due to the distribution of constituents of concern, the combined ITT, AMSF, and Cinemark properties are included in the RI scope of work. A Site location plan showing the ITT, AMSF, and Cinemark properties is attached as Figure 1.

The Site background is presented Section 2.1 of the RI/FS Work Plan, May 2004.

Summary of RI Phase I Vapor Intrusion Sampling Program

In 2004, ITT began a RI investigation, based on the RI/FS Work Plan (May 2004), at the Site and neighboring properties. As part of these activities, the potential for vapor intrusion due to the presence of VOCs in shallow ground water was investigated on the vacant ITT property and on the off-Site AMSF property (Figure 1). For the vacant ITT property, indoor air concentrations were below New York State Department of Health air guidance values (AGVs). However, sub-slab concentrations were such that the NYSDEC requested sub-slab mitigation. The ITT property remains unoccupied, and ITT has committed to revisit this issue in advance should the ITT property be returned to active use.

Off-Site vapor intrusion sampling, both sub-slab and indoor air, completed on the AMSF property did not identify concentrations of ITT Site-related compounds in excess of AGVs.

Upon completion of the RI investigation activities, data gaps in the off-Site VI evaluation were identified during a meeting with the NYSDEC in Avon, NY on April 20, 2006. Concentrations of 1,1,1-trichloroethane (TCA) in the shallow ground water in the vicinity of the Cinemark building, located north of the Site, were detected above the New York State Class GA Standards. As a result NYSDEC has requested that ITT perform VI sampling on the Cinemark property as part of the RI Phase II activities. This letter RI Phase II VI Work Plan provides a scope of work for this sampling.

Proposed RI Phase II VI (Cinemark) Evaluation

Introduction

The scope of the RI Phase II VI sampling presented herein was developed based on reviews of previous Site and off-Site sampling activities, the Phase I RI results, and discussions with the NYSDEC. The RI Phase II VI sampling activities and results will be incorporated in the RI Report following the completion of all RI Phase II investigations. As required by the Consent Order, results will also be provided to NYSDEC via monthly report submittals.

In order to provide proper guidance to the laboratory for the VI sample analysis, VI related QAPP tables have been included with this letter.

Objective

As noted above, the objective of this letter RI Phase II VI Work Plan is to evaluate VI potential at the Cinemark building. Therefore, concurrent sub-slab soil vapor and indoor air samples will be collected from the Cinemark building to assess the current and future potential for migration of soil vapor to indoor air. This sampling will be completed because chlorinated volatile organic compounds (VOCs) have been detected in shallow bedrock ground water in the vicinity of the building during the RI Phase I sampling. VI analytical results will be compared to the New York State Department of Health (NYSDOH) decision matrix for vapor intrusion. The vapor intrusion results will be included in the RI report.

Site Access

The ITT property is currently unoccupied and is accessible. Access for the Cinemark property will be negotiated prior to the initiation of sampling activities. If necessary, NYSDEC may provide support in obtaining access to the Cinemark property. Implementation of proposed RI Phase II VI sampling activities in this Work Plan are contingent upon ITT obtaining any necessary access privileges.

VI Sampling

At this time ITT has not had access to the Cinemark building. Therefore the selection of VI sample locations within the Cinemark building will be completed in coordination with NYSDEC and NYSDOH representatives during a joint building reconnaissance. The number and location of proposed samples will be documented on a figure and submitted via electronic mail to the NYSDEC for their approval prior to initiating the sample collection. VI sampling of the Cinemark building is the only VI sampling proposed for the RI Phase II activities.

A building chemical survey will be conducted immediately prior to the sample collection and documented on a building survey form found in NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). At each agreed to VI sample location, one sub-slab and one indoor air sample will be collected simultaneously over an 8-hour period. In addition, one ambient air sample will be collected outside of and immediately upwind of the building. Sample collection procedures are attached. Sampling will be completed by trained O'Brien & Gere personnel.

Samples (canisters) will be delivered under Chain-of-Custody protocols to Severn Trent Laboratories (STL) – Burlington, Vermont. This laboratory is certified by the Environmental Laboratory Approval Program (ELAP) and certified by NYSDOH for USEPA Method TO-15. Samples will be analyzed via USEPA Method TO-15 for VOCs listed in Table 1 (attached), which include the compounds detected in sub-slab samples collected on-Site during the August 2004 vapor intrusion sampling events. Table 1 also includes estimated reporting limits for undiluted samples. These indoor air reporting limits achieve the 0.25 micrograms per cubic meter ($\mu g/m^3$) for trichloroethene and 1 $\mu g/m^3$ for other compounds as recommended by NYSDOH. The reporting limits include dilution (4X) that Severn Trent Laboratories injects into every sample. Additional dilution may be necessary if elevated concentrations are present. The actual reporting limits may be higher than those identified in Table 1 depending on the amount of dilution that may be needed for the analysis.

Quality Assurance/Quality Control

One duplicate sample of indoor air and one duplicate sample of sub-slab vapor will be collected to assess overall precision. No trip or equipment blanks are planned. Chain-of-custody procedures (form attached) will be utilized during sample collection and delivery to the laboratory. Analytical QA/QC requirements, as described in Table 2 (attached), will be followed by the laboratory. Data will be validated by O'Brien & Gere and a data usability summary report (DUSR) will be prepared. Data validation will be completed in accordance with the RI Phase II Work Plan (to be submitted).

The air samples will be submitted to STL Burlington of Burlington, Vermont for VOC analysis. Don Dawicki of STL Burlington will serve as the Laboratory QC Coordinator. Jack Dustin of STL Burlington or his designee will serve as the Laboratory Sample Custodian.

The analytical method to be used in this VI sampling is listed in Table 3 (attached). The types of parameters, methods, and matrix, to be collected for this project are presented in Table 4 (attached). The reporting limits for the specific parameters are listed in Table 1 (attached). The QC requirements and corrective actions presented in Table 2 (attached) will be applied by the laboratory. The most recent laboratory control limits will be used to evaluate the data and will be presented in the applicable data packages.

The laboratory will report non-detected data to the reporting limits. Data that are less than the reporting limits, but greater that the method detection limits (MDLs) (Table 5, attached), will be reported by the laboratory using the "J" flag. The MDLs listed in Table 5, or the most recent detection limits, will be reported by the laboratory. Communications with the O'Brien & Gere project team will be documented by the laboratory in the data packages.

Data Evaluation and Reporting

Sample results for chloroform, trichloroethene, 1,1,1-trichloroethane, and tetrachloroethene will be evaluated with respect to the NYSDOH Soil Vapor/Indoor Air Matrices 1 and 2. Results for other compounds will be evaluated to assess if indoor air concentrations may be attributable to vapor intrusion. The evaluation will consider the indoor air concentrations with respect to ambient air concentrations, typical indoor air concentrations, and the results of the building chemical survey.

A summary table and building figure showing sampling locations will be submitted to NYSDEC within two weeks of the completion of data validation. A summary of the sampling and results will be included in the RI report. This RI report summary will include the following:

- Sampling program overview
- Sampling and analytical methods
- Field forms
- QA/QC results and discussion
- Laboratory reports (Category B documentation)
- Results and discussion
- Data evaluation

Investigation Derived Waste

Investigation derived wastes (IDW) will be handled in accordance with Section 4.9 of the RI/FS Work Plan, May 2004. IDW generated will be properly stored, labeled, marked, profiled, manifested, transported and disposed of off-Site in accordance with applicable local, state and federal regulations. The NYSDEC will be advised as to the proposed disposal method.

Health and Safety

Health and Safety procedures are presented in the Health and Safety Plan of the RI/FS Work Plan, May 2004.

Community Relations

Community relations for this RI Phase II VI Work Plan are presented in the Health and Safety Plan of the RI/FS Work Plan, May 2004.

Proposed Schedule

Upon NYSDEC and NYSDOH approval of the VI sampling plan, the joint building reconnaissance with NYSDEC and NYSDOH will be conducted once access is obtained from the property owner, Cinemark. Sampling activities will be implemented when the sample locations have been approved by the NYSDEC. Sampling activities are currently scheduled for March 2007 with the expectation that site access will be available and sample locations approved by the NYSDEC. Sampling has been scheduled such that it will be completed by the end of the current heating season, March 31, 2007. If access and approvals are not obtained in time to conduct the sampling by March 31, 2007, then sampling will be conducted during the next heating season.

Please contact me at (315) 437-6100 or Teresa Olmsted at (714) 630-3175 if you have any questions or comments regarding this proposed RI Phase II VI sampling plan.

Very truly yours.

O'BRIEN & GERE ENGINEERS, INC.

Guy Swenson

Guy Swenson, CPG
Technical Director

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Attachments
Tables 1-5
Figure 1
VI Sample Collection Protocols
Chain of Custody Form

cc: D. McNaughton – NYSDOH
J. White – NYSDEC
J. Albert – Monroe County Health Dept.
J. Hausbeck – NYSDEC
M. Peters – PH&C
T. Olmsted – ITT
S. Tucker – OBG
J. Danzinger – Day Environmental

Table 1. U*SEPA Method TO-15 Volatile Organic Compounds (VOCs) List*
Former ITT Rochester Form Machine Facility - Town of Gates, NY   Site #8-28-112

Compound	**Molecular Weight**	**Indoor Air* RL (ppbv)**	**Soil Gas** RL (ppbv)**	**Indoor Air* RL (ug/m$^{3)}$**	**Soil Gas** RL (ug/m$^{3)}$**
1,1,1-Trichloroethane	133.42	0.04	0.16	0.22	0.87
1,1,2,2-Tetrachloroethane	167.86	0.04	0.16	0.27	1.10
1,1,2-Trichloroethane	133.42	0.04	0.16	0.22	0.87
1,1-Dichloroethane	98.97	0.04	0.16	0.16	0.65
1,1-Dichloroethene	96.95	0.04	0.16	0.16	0.63
1,2-Dibromoethane	187.88	0.04	0.16	0.31	1.23
1,2-Dichloroethane	98.96	0.08	0.16	0.32	0.65
1,2-Dichloropropane	112.99	0.08	0.16	0.37	0.74
1,3,5-Trimethylbenzene	120.19	0.04	0.16	0.20	0.79
1,3-Butadiene	54.09	0.08	0.40	0.18	0.88
2,2,4-Trimethylpentane	114.23	0.04	0.16	0.19	0.75
3-Chloropropene	76.53	0.08	0.40	0.25	1.25
4-Ethyltoluene	120.2	0.04	0.16	0.20	0.79
Benzene	78.11	0.04	0.16	0.13	0.51
Bromodichloromethane	163.83	0.04	0.16	0.27	1.07
Bromoethene	106.96	0.08	0.16	0.35	0.70
Bromoform	252.75	0.04	0.16	0.41	1.65
Bromomethane	94.95	0.08	0.16	0.31	0.62
Carbon Tetrachloride	153.84	0.04	0.16	0.25	1.01
Chloroethane	64.52	0.08	0.40	0.21	1.06
Chloroform	119.39	0.04	0.16	0.20	0.78
cis-1,2-Dichloroethene	96.95	0.04	0.16	0.16	0.63
cis-1,3-Dichloropropene	110.98	0.04	0.16	0.18	0.73
Cyclohexane	84.16	0.04	0.16	0.14	0.55
Dibromochloromethane	242.74	0.04	0.16	0.40	1.59
Dichlorodifluoromethane	120.92	0.04	0.40	0.20	1.98
Dichlorotetrafluoroethane	170.93	0.04	0.16	0.28	1.12
Ethylbenzene	106.16	0.04	0.16	0.17	0.69
m,p-Xylene	106.16	0.08	0.40	0.35	1.74
Methyl tert-Butyl Ether	88.15	0.04	0.40	0.14	1.44
n-Heptane	101.2	0.04	0.16	0.17	0.66
n-Hexane	86.18	0.08	0.40	0.28	1.41
o-Xylene	106.16	0.04	0.16	0.17	0.69
Tetrachloroethene	165.85	0.04	0.16	0.27	1.09
Toluene	92.13	0.04	0.16	0.15	0.60
trans-1,2-Dichloroethene	96.95	0.04	0.16	0.16	0.63
trans-1,3-Dichloropropene	110.98	0.04	0.16	0.18	0.73
Trichloroethene	131.4	0.04	0.16	0.21	0.86
Trichlorofluoromethane	137.38	0.04	0.16	0.22	0.90
Vinyl Chloride	62.5	0.08	0.16	0.20	0.41

* Also includes outdoor ambient air .

** Also includes sub-slab soil vapor.

Table 2. *Volatile Organic Compounds using USEPA Method TO-15 Quality Control Requirements and Corrective Actions*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Audit	Frequency	Control Limits	Corrective Action
Holding Times	Samples must be analyzed within holding time.	For VOCs analyze within 30 days of sample collection. STL Burlington can provide information upon request that supports the holding time of 30 days from collection. Preservation of sample containers is not required.	1. If holding times are exceeded for initial or any re-analyses required due to quality control excursions, notify Quality Assurance Officer immediately since re-sampling may be required. 2. Document corrective action in the case narrative
Canister Cleaning	1. Canisters must be clean and free of any contaminants before sample collection. 2. Canisters may be batch or individually certified. It is recommended that canisters are individually certified for low level, indoor air samples (<0.5 ug/m3).	1. Canisters are cleaned using either humid zero air cleaning procedures as described in USEPA Method TO-15 or the canisters are heated in an isothermal oven or by use of heating bands. 2. Batch certified: 10% of the canisters per batch are analyzed by TO-15; 3. Individual certified: each canister is analyzed by TO-15. 4. Clean canisters do not contain analytes above or equal to the PQL. 2. Any canister that has not tested clean will not be used.	Not applicable
Canister Leak Check	Canisters must be leak tested by pressurizing or evacuating them.	1. The initial pressure or vacuum is measured, the canister valve is closed, and the final pressure or vacuum is checked after 24 hours. If acceptable, the pressure should not vary more than ± 13.8 kPa (± 2 psig) over the 24 hour period.	Not applicable

Table 2. *Volatile Organic Compounds using USEPA Method TO-15 Quality Control Requirements and Corrective Actions*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Audit	Frequency	Control Limits	Corrective Action
MS Tuning	Once every 24 hours prior to initial calibration and calibration verification.	1. Tune key ions and abundance criteria listed in USEPA Method TO-15 must be met for all ions and analyses must be performed within 24 hours of injection of the tune. 2. Part of the tune peak will not be background subtracted to meet tune criteria. 3. Documentation of all tune analyses and evaluations must be included in the data packages.	1. Tune the mass spectrometer. 2. Document corrective action in the case narrative - samples cannot be analyzed until control limit criteria have been met.
Analytical Sequence	Analytical sequence is defined as analyses performed within a 24-hour period.	Not applicable	Not applicable
Initial Calibration	Prior to sample analysis and when calibration verification criteria are not met. Initial calibration will contain all target analytes in each standard.	1. At a minimum five concentrations bracketing expected concentration range for all compounds of interest. One standard must be at the practical quantitation limit or lower. 2. The %RSD must be less than or equal to 30 for all target analytes. 3. The RRT for each target analyte at each calibration level must be within 0.06 RRT units of the mean RRT for the compound. 4. The retention time shift for each of the internal standards at each calibration level must be within 20 seconds of the mean retention time over the initial calibration range for each internal standard.	1. Identify and correct problem. 2. Recalibrate instrument; samples must not be analyzed until initial calibration criteria are met.

Table 2. *Volatile Organic Compounds using USEPA Method TO-15 Quality Control Requirements and Corrective Actions*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Audit	Frequency	Control Limits	Corrective Action
Calibration Verification	Every 24 hours, following tune. Calibration verification will contain all target analytes in each standard at a concentration that is representative of the midpoint of the initial calibration.	1. The percent difference must be less than or equal to 30 for all target analytes	1. Reanalyze. 2. If criteria are still not met, identify and correct problem, recalibrate; samples cannot be analyzed until continuing calibration criteria are met.
Method Blank Analysis	Prepared with each analytical sequence of 24-hour period. The method blank is an unused, certified canister that has not left the laboratory. The blank canister is pressurized with humidified, ultra-pure zero air and carried through the same analytical procedure as a field sample. The injected aliquot of the blank must contain the same amount of internal standards that are added to each sample.	1. The laboratory method blank must be analyzed after the calibration standard and before any samples are analyzed. 2. The blank can not contain any target analyte at a concentration greater than its practical quantitation limit or analytes with elution characteristics and mass spectral features that would interfere with identification and measurement of a method analyte.	1. Reanalyze blank. 2. If limits are still exceeded, investigate and correct problem. Otherwise, flag data indicating blank contamination was detected. 3. Document corrective action in the case narrative.
Equipment Blank Analysis	None	Not applicable.	Not applicable

Table 2. *Volatile Organic Compounds using USEPA Method TO-15 Quality Control Requirements and Corrective Actions*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Audit	Frequency	Control Limits	Corrective Action
Internal Standards	All samples, blanks and quality control samples. Add sufficient internal standard equivalent to 10 ppbv in the sample.	1. The area response for each internal standard must be within ±40 percent of the mean area response of the internal standard in the most recent valid calibration. 2. The retention time for each of the internal standards in the blanks must be within ±0.33 minutes between the analysis and the most recent valid calibration. 3. The retention time for the internal standard in the samples or QC analyses must be within 20 seconds from the calibration verification standard.	1. Reanalyze. 2. If recovery is still outside criteria, report both analyses. 3. Document corrective action in the case narrative.
Laboratory Control Sample	Every 24 hours, following CCV. Laboratory control sample (LCS) will contain all target analytes in each calibration standard, using a second source, at a concentration that is near a midpoint calibration standard.	1. The percent recovery 70 to 130% for all target analytes	1. Reanalyze. 2. If criteria are still not met, discuss corrective actions with O'Brien & Gere QA Manager.
Laboratory Control Sample Duplicate	Every 24 hours, following LCS analysis. Laboratory control sample will contain all target analytes in each calibration standard, using a second source, at a concentration that is near a midpoint calibration standard.	1. The percent recovery 70 to 130% for all target analytes. 2. Within 25 relative percent difference (RPD).	1. Reanalyze. 2. If criteria are still not met, discuss corrective actions with O'Brien & Gere QA Manager.

Table 2. *Volatile Organic Compounds using USEPA Method TO-15 Quality Control Requirements and Corrective Actions*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Audit	Frequency	Control Limits	Corrective Action
Field Dup. Analysis	One per sample collection batch.	Within 25 RPD for air samples. For sample results that are less than or equal to five times the practical quantitation limit, the criterion of plus or minus two times the practical quantitation limit will be applied to evaluate field duplicates.	No corrective action required of the laboratory since the laboratory will not know the identity of the field duplicate samples. If these criteria are not met, sample results will be evaluated on a case-by-case basis.
Sample Batching	The laboratory will batch project samples together along with QC samples specified from the project. Non-project information will not be included in the data packages.	Not applicable	Not applicable
Sample Analysis	All canister samples should be at temperature equilibrium with the laboratory.	Not applicable	Not applicable
Laboratory control limits	1. Generated with results for an analyte from a minimum of 20 sample analyses. The average of the sample results and the standard deviation are calculated. The internal warning limits are established at 2 times the standard deviation and the control limits are established at 3 times the standard deviation. The control limits are updated annually.	Not applicable	Not applicable

Table 2. *Volatile Organic Compounds using USEPA Method TO-15 Quality Control Requirements and Corrective Actions*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Audit	Frequency	Control Limits	Corrective Action
Deliverables	1. CLP-like deliverables must be provided to document each audit item for easy reference and inspection. 2. An example calculation will be provided for each analysis, for each type of matrix in the data package using samples from the project. 3. Any laboratory abbreviations or notations presented in the raw data or summary information will be explained or referenced in the case narrative. 4. Final spiking concentrations will be presented in summary form. 5. Standard tracing information will be provided. 6. Cooler temperatures will be provided in the data packages. 7. Run logs will be provided in the data packages.	Not applicable	Provide missing or additional deliverables for validation purposes.

Notes:
Data validation will be performed in accordance with QA/QC criteria established in these tables and the analytical methods. Excursions from QA/QC criteria will be qualified based on guidance provided in this QAPP.
Communications with the QAO will be documented and included in the data packages.
Source: O'Brien & Gere

Table 3. *Analytical Methods*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Sample type	Parameter	Analytical method*
Air	Volatile organic compounds (VOCs)	USEPA Method TO-15

Notes:

1. United States Environmental Protection Agency. (USEPA). 1999b. *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air.* Cincinnati, Ohio.

* Indicates that New York State Department of Environmental Conversation (NYSDEC). 2005. *NYSDEC Analytical Services Protocol (ASP) Methods.* Albany, New York will be used as guidance where applicable. The laboratory's interpretation of the guidance will be utilized.

Source: O'Brien & Gere

Table 4. *Field Sampling Summary*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Parameter (method)*	Matrix	Sample containers and volumes	Preservation	Holding times	Number of Investigative Samples	QC sample frequency			
						Field duplicate	**Trip blank**	**MS/MSD ****	**Field/ Equipment blank**
VOCs (USEPA Method TO-15)[1]	Air	6-Liter Stainless-Steel SUMMA Vacuum Canister	None	30 days from collection for analysis.	TBD	One per 20 samples or one per matrix (for less than 20 samples)	NA	NA	None

NOTES:
* Indicates that New York State Department of Environmental Conversation (NYSDEC). 2005. *NYSDEC Analytical Services Protocol (ASP) Methods.* Albany, New York will be used as guidance, where applicable. The laboratory's interpretation of the guidance will be utilized.

**MS/MSD indicates matrix spike/matrix spike duplicate sample.

1. United States Environmental Protection Agency. (USEPA). 1999. *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air.* Cincinnati, Ohio.

NA indicates not applicable.
TBD indicates numbers of samples will be determined at a later date.

Source: O'Brien & Gere

Table 5. *Laboratory PQLs and MDLs for Volatile Organic Compounds Using USEPA Method TO-15 and Screening Criteria for Air Samples Analyzed by STL Burlington.*
Former ITT Rochester Form Machine Machine Facility – Town of Gates, NY   Site #8-28-112

Parameter	**MDL (ppbv)**
1,1,1-Trichloroethane	0.028
1,1,2,2-Tetrachloroethane	0.021
1,1,2-Trichloroethane	0.029
1,1-Dichloroethane	0.027
1,2-Dichloroethane	0.016
1,1-Dichloroethene	0.031
1,2-Dichloroethene (total)	0.054
1,2-Dichloropropane	0.080
1,3,5-Trimethylbenzene	0.053
1,3-Butadiene	0.039
2,2,4-Trimethylpentane	0.016
3-Chloropropene	0.070
4-Ehtyltoluene	0.026
Benzene	0.022
Bromodichloromethane	0.062
Bromoethene	0.028
Bromoform	0.062
Bromomethane	0.029
Carbon tetrachloride	0.019
Chloroethane	0.046
Chloroform	0.025
cis-1,2-Dichloroethene	0.051
cis-1,3-Dichloropropene	0.016
Cyclohexane	0.044
Dibromochloromethane	0.062
Dichlorodifluoromethane	0.016
Dichlorotetrafluoroethane	0.021
Ethylbenzene	0.062
m,p-Xylene	0.042
n-Heptane	0.048
n-Hexane	0.032
o-Xylene	0.028
Methyl tert-Butyl Ether	0.036
Tetrachloroethene	0.048
Toluene	0.020
trans-1,2-Dichloroethene	0.027
trans-1,3-Dichloropropene	0.018
Trichloroethene	0.028
Trichlorofluoromethane	0.022
Vinyl chloride	0.021

Notes:
MDL indicates method detection limit.
ppbv indicates parts per billion by volume.

Source: O’Brien & Gere

T:\3356_ITT\Rochester\MXD\35273\RI Addendum\FIGURE 6.MXD

FIGURE 1

This document was developed in color. Reproduction in B/W may not represent the data as intended.

FORMER ITT ROCHESTER FORM
MACHINE FACILITY
TOWN OF GATES, NEW YORK
SITE #8-28-112

SITE MAP

0 50 100 200 300
Feet

JANUARY 2007
3356/35273

O'BRIEN & GERE
ENGINEERS, INC.

APPENDIX D-1

SUB-SLAB VAPOR SAMPLE COLLECTION PROCEDURES

This set of procedures outlines the general steps to collect sub-slab vapor samples. The site-specific Sampling and Analysis Work Plan should be consulted for proposed sample locations, sample depths, and sampling duration.

Sub-Slab Vapor Probe Installation

Temporary sampling probes will be installed using the following procedures:

- If appropriate, record weather information (temperature, barometric pressure, relative humidity, wind speed, and wind direction) at the beginning of the sampling event. Record substantial changes to these conditions that may occur during the course of sampling. The information may be measured with on-site equipment or obtained from a reliable source of local measurements (e.g., a local airport).

- Insert a section of food-grade Teflon® or other appropriate tubing through a 3/8-inch (approx.) hole drilled through the slab. If necessary, advance the drill bit 2 to 3 inches into the sub-slab material to create an open cavity.

- Install the tubing inlet to the specified sampling depth below the slab.

- Seal the annular space between the hole and tubing using 100% beeswax or another inert, non-shrinking sealing compound such as permagum®.

Sub-Slab Vapor Sample Collection

Sub-slab vapor samples will be collected by following the steps outlined below.

- Purge the tubing using a vacuum pump or gas-tight syringe (~60 cc). Calculate the volume of air (volume = πr^2h) in the tubing and purge one to three tubing volumes prior to sample collection at a rate no greater than 0.2 liter per minute (lpm).

- Use an evacuated Summa® passivated (or equivalent) canister to collect the sub-slab vapor sample. The canister will be provided by the laboratory, along with a flow controller equipped with an in-line particulate filter and a vacuum gauge. The flow controller will be pre-calibrated by the laboratory for the desired flow rate or duration of sample collection. The canisters will be batch certified as clean by the laboratory.

- Remove the protective brass plug from canister. Connect the pre-calibrated flow controller to the canister.

- Record the identification numbers for the canister and flow controller. Record the initial canister pressure on the vacuum gauge (check equipment-specific instructions for taking this measurement). A canister with a significantly different pressure than originally recorded by the testing laboratory should not be used for sampling. Record these numbers and values on the chain-of-custody form for each sample.

- Connect the tubing from the sub-slab vapor sampling probe to the flow controller.

- Open the valve on the canister. Record the time that the valve is opened (beginning of sampling) and the canister pressure on the vacuum gauge.

- Photograph the canister and the area surrounding the canister.

- Monitor the vacuum pressure in the canister routinely during sampling.

- Stop sample collection after the scheduled duration of sample collected, but when the canister still has a minimum amount of vacuum remaining. Check with the laboratory supplying the canister and flow controller for the ideal final vacuum pressure. Typically, the minimum vacuum is between 2 and 5 inches of mercury, but not zero. If there is no vacuum remaining, the sample will be rejected and collected again in a new canister.

- Record the final vacuum pressure and close the canister valve. Record the date and time that sample collection was stopped.

- Remove the flow controller from the canister and replace the protective brass plug.

- Attach labels/tags (sample name, time/date of sampling, etc.) to the canister as directed by the laboratory.

- Place the canister and other laboratory-supplied equipment in the packaging provided by the laboratory.

- Enter the information required for each sample on the chain-of-custody form, making sure to include the identification numbers for the canister and flow controller, and the initial and final canister pressures on the vacuum gauge.

- Include the required copies of the chain-of-custody form in the shipping packaging, as directed by the laboratory. The field crew will retain a copy of the chain-of-custody for the project file.

- Deliver or ship the samples to the laboratory as soon as practical.

APPENDIX D-2

INDOOR AIR SAMPLE COLLECTION PROCEDURES

This set of procedures outlines the general steps to collect indoor air samples. The site-specific Sampling and Analysis Work Plan should be consulted for proposed sampling locations and other indoor air requirements (inventory, etc.).

Indoor air samples will be collected by following the steps outlined below:

- Record outdoor weather information (temperature, barometric pressure, relative humidity, wind speed, and wind direction) and indoor temperature and humidity at the beginning of the sampling event. Record substantial changes to these conditions that may occur during the course of sampling. The information may be measured with on-site equipment or obtained from a reliable source of local measurements (e.g., a local airport).

- Use an evacuated Summa® passivated (or equivalent) stainless-steel canister to collect the outdoor air sample. The canister will be provided by the laboratory, along with a flow controller equipped with an in-line particulate filter and a vacuum gauge. The flow controller will be pre-calibrated by the laboratory for the desired flow rate or duration of sample collection. The canisters will be individually certified as clean by the laboratory.

- Place the canister at the sampling location. If the sample should be collected from breathing height (e.g., 3 to 5 feet above ground), then mount the canister on a stable platform such that the sample inlet will be at the proper height.

- Remove the protective brass plug from canister. Connect the pre-calibrated flow controller to the canister.

- Record the identification numbers for the canister and flow controller. Record the initial canister pressure on the vacuum gauge (check equipment-specific instructions for taking this measurement). A canister with a significantly different pressure than originally recorded by the testing laboratory should not be used for sampling. Record these numbers and values on the chain-of custody form for each sample.

- Open the valve on the vacuum pressure in the canister. Record the time that the valve was opened (beginning of sampling) and the canister pressure on the vacuum gauge.

- Photograph the canister and the area surrounding the canister.

- Monitor the vacuum pressure in the canister routinely during sampling. During monitoring, note the vacuum pressure on the gauge.

- Stop sample collection after the scheduled duration of sample collection, but make sure that the canister still has a minimum amount of vacuum remaining. Check with the laboratory supplying the canister and flow controller for the ideal final vacuum pressure. Typically, the minimum vacuum is between 2 and 5 inches of mercury, but not zero. If there is no vacuum remaining, the sample will be rejected and collected again in a new canister.

- Record the final vacuum pressure and close the canister valves. Record the date and time that sample collection was stopped.

- Remove the flow controller from the canister and replace the protective brass plug.

- Attach labels/tags (sample name, time/date of sampling, etc.) to the canister as directed by the laboratory.

- Place the canister and other laboratory-supplied equipment in the packaging provided by the laboratory.

- Enter the information required for each sample on the chain-of-custody form, making sure to include the identification numbers for the canister and flow controller, and the initial and final canister pressures on the vacuum gauge.

- Include the required copies of the chain-of-custody form in the shipping packaging, as directed by the laboratory. The field crew will retain a copy of the chain-of-custody for the project file.

- Deliver or ship the samples to the laboratory as soon as practical.

APPENDIX D-3

AMBIENT AIR SAMPLE COLLECTION PROCEDURES

This set of procedures outlines the general steps to collect ambient air samples. The site-specific Sampling and Analysis Work Plan should be consulted for proposed sample locations and sampling duration.

The following procedures will be followed for the collection of ambient air samples:

- Select a location upwind of the building or other area that is being evaluated.

- Record weather information (i.e., temperature, barometric pressure, relative humidity, wind speed, and wind direction) at the beginning of the sampling event. Record substantial changes to these conditions that may occur during the course of sampling. The information may be measured with on-site equipment or obtained from a reliable source of local measurements (e.g., a local airport).

- Use an evacuated Summa® passivated (or equivalent) stainless-steel canister to collect the ambient air sample. The canister will be provided by the laboratory, along with a flow controller equipped with an in-line particulate filter and a vacuum gauge. The flow controller will be pre-calibrated by the laboratory for the desired flow rate or duration of sample collection. The canisters will be individually certified as clean by the laboratory.

- Place the canister at the sampling location. If the sample should be collected from breathing height (e.g., 3 to 5 feet above ground), then mount the canister on a stable platform such that the sample inlet will be at the proper height.

- Remove the protective brass plug from canister. Connect the pre-calibrated flow controller to the canister.

- Record the identification numbers for the canister and flow controller. Record the initial canister pressure on the vacuum gauge (check equipment-specific instructions for taking this measurement). A canister with a significantly different pressure than originally recorded by the testing laboratory should not be used for sampling. Record these numbers and values on the chain-of custody form for each sample.

- Open the valve on the vacuum pressure in the canister. Record the time that the valve was opened (beginning of sampling) and the canister pressure on the vacuum gauge.
- Photograph the canister and the area surrounding the canister.
- Monitor the vacuum pressure in the canister routinely during sampling. During monitoring, note the vacuum pressure on the gauge.
- Stop sample collection after the scheduled duration of sample collection but make sure that the canister still has a minimum amount of vacuum remaining. Check with the laboratory supplying the canister and flow controller for the ideal final vacuum pressure. Typically, the minimum vacuum is between 2 and 5 inches of mercury, but not zero. If there is no vacuum remaining, the sample will be rejected and collected again in a new canister.
- Record the final vacuum pressure and close the canister valves. Record the date and time that sample collection was stopped.
- Remove the flow controller from the canister and replace the protective brass plug.
- Attach labels/tags (sample name, time/date of sampling, etc.) to the canister as directed by the laboratory.
- Place the canister and other laboratory-supplied equipment in the packaging provided by the laboratory.
- Enter the information required for each sample on the chain-of-custody form, making sure to include the identification numbers for the canister and flow controller, and the initial and final canister pressures on the vacuum gauge.

- Include the required copies of the chain-of-custody form in the shipping packaging, as directed by the laboratory. The field crew will retain a copy of the chain-of-custody for the project file.

- Deliver or ship the samples to the laboratory as soon as practical.

Figure 1. ***Example chain-of-custody***

Project Name:_____________________________________
Project No. ______________________Sheet ____ of ____

Office: _________________________
Address:_________________________
Phone: _________________________

CHAIN OF CUSTODY

Cooler Temperature _______________________

CLIENT: LOCATION:	COLLECTED BY: (Signature)

SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix[1]	Sample Type[2]	No. of Containers	ANALYSIS REQUESTED/COMMENTS[3]

[1] Matrix = Soil [2]Type = grab, composite [3] SVOC - 8270C

	Date	Time		Date	Time
Relinquished by:_____________________________ of:____			Received by:________________________________ of:____		
Relinquished by:___________________________ of:_______________________________________	Date	Time	Received by:__________________________________ of:____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by:___________________________ of:_______________________________________	Date	Time	Courier Name and Airbill Number:____________________________________ _______________________________________ ***Attach delivery/courier receipt to Chain of Custody**	Date	Time
Relinquished by:_____________________________ of:____	Date	Time	Received by:__________________________ of:___________________________________	Date	Time