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THROUGH: Jeffrey Bradstreet, REAC Air Response Section Leader *Jeffrey Bradstreet*
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SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 0-296

Attached please find the following document prepared under this work assignment:

FINAL ANALYTICAL TAGA REPORT
MILLS GAP ROAD TCE SITE
SKYLAND, NC
JANUARY 2008

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FINAL ANALYTICAL TAGA REPORT
MILLS GAP ROAD TCE SITE
SKYLAND, NC
JANUARY 2008

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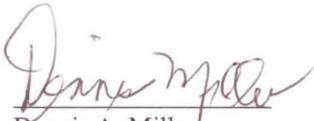
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1.0 INTRODUCTION

The Environmental Protection Agency (EPA)/Environmental Response Team (ERT) issued Work Assignment (WA) Number 0-296, Mills Gap Road TCE Site in Skyland, NC, to Lockheed Martin under the Response Engineering and Analytical Contract (REAC). As an element of this WA, REAC personnel were to conduct target compound monitoring using the ECA Trace Atmospheric Gas Analyzer (TAGA) IIe, to assist EPA Region IV in its investigation of residential indoor air quality.

The TAGA air monitoring events conducted from 10 through 12 December 2007 were screening in nature. Air monitoring for trichloroethene (TCE) and tetrachloroethene (PCE) was performed in accordance with the REAC Draft Standard Operating Procedure (SOP) # 1711, *Trace Atmospheric Gas Analyzer (TAGA) IIe Operations*. Real-time monitoring for the target compounds was performed using a selected ion technique.

2.0 METHODOLOGY

2.1 Mass Spectrometer/Mass Spectrometer General Theory

The ECA TAGA IIe is based upon the Perkin-Elmer API 365 mass spectrometer/mass spectrometer (MS/MS) and is a direct air-monitoring instrument capable of detecting, in real time, trace levels of many organic compounds in ambient air. The technique of triple quadrupole MS/MS is used to differentiate and quantitate compounds.

The initial step in the MS/MS process involves simultaneous chemical ionization of the compounds present in a sample of ambient air. The ionization produces both positive and negative ions by donating or removing one or more electrons. The chemical ionization is a "soft" ionization technique, which allows ions to be formed with little or no structural fragmentation. These ions are called parent ions. The parent ions with different mass-to-charge (m/z) ratios are separated by the first quadrupole (the first MS of the MS/MS system). The quadrupole scans selected m/z ratios allowing only the parent ions with these ratios to pass through the quadrupole. Parent ions with m/z ratios different than those selected are discriminated electronically and fail to pass through the quadrupole.

The parent ions selected in the first quadrupole are accelerated through a collision cell containing uncharged nitrogen molecules in the second quadrupole. A portion of the parent ions entering the second quadrupole fragments as they collide with the nitrogen molecules. These fragment ions are called daughter ions. This process, in the second quadrupole, is called collision induced dissociation. The daughter ions are separated according to their m/z ratios by the third quadrupole (the second MS of the MS/MS system). The quadrupole scans selected m/z ratios, allowing only the daughter ions with these ratios to pass through the quadrupole. Daughter ions with m/z ratios different than those selected are discriminated electronically and fail to pass through the quadrupole. Daughter ions with the selected m/z ratios are then counted by an electron multiplier. The resulting signals are measured in ion counts per second (icps) for each parent/daughter ion pair selected. The intensity of the icps for each parent/daughter ion pair is directly proportional to the ambient air concentration of the organic compound that produced the ion pair. All of the ions discussed in this report have a single charge. The m/z ratios of all of the ions discussed are equal to the ion masses in atomic mass units (amu). Therefore, the terms parent and daughter masses are synonymous with parent and daughter ion m/z ratios.

2.2 TAGA Procedure

The TAGA was used to analyze indoor air and outdoor ambient air during stationary and mobile monitoring events. Indoor monitoring utilized a 300-foot corrugated Teflon[®] sampling hose. The proximal end was attached to the TAGA source inlet, while the distal end was taken inside a unit. For mobile monitoring, one end of a 4-foot corrugated Teflon[®] sampling hose was attached to the

TAGA source inlet, while the other was attached to a glass transfer tube passing through the wall of the bus during the monitoring event. In both cases, air was continuously drawn through the hose at a set flow rate and transported to the TAGA source during the monitoring event.

2.2.1 TAGA Mass Calibration

At the beginning of the monitoring period, a gas mixture containing benzene, toluene, xylenes, tetrachloroethene, trichloroethene, 1,1-dichloroethene, and vinyl chloride was introduced by a mass flow controller (MFC) into the sample air flow (SAF). The tuning parameters for the first quadrupole at 30, 78, 106, 130, and 166 amu, and the third quadrupole at 30, 78, 105, 129, and 166 amu were optimized for sensitivity and mass assignment. The peak widths were limited between 0.55 amu and 0.85 amu. The mass assignments were set to the correct values within 0.15 amu.

2.2.2 TAGA Response Factor Measurements

The TAGA was calibrated for the target compounds at appropriate times selected by the TAGA operator. The calibration system consisted of a regulated gas cylinder containing a gas standard mixture of the target compounds connected to an in-line MFC. The MFC was calibrated with a National Institute of Standards and Technology (NIST) traceable flow rate meter. The gas standard certification is presented in Appendix A. The gas standard containing a known mixture of target compounds, certified by the supplier, was regulated at preset flow rates, and diluted with ambient air. The dilution of the gas standard resulted in known analyte concentrations. The calibration consisted of a zero point and five known concentrations obtained by setting the MFC to 0, 10, 20, 40, 80, and 90 milliliters per minute (mL/min) with the SAF at 1,500 milliliters per second (mL/sec).

The approximate concentration range of standards introduced into the TAGA was between 2 and 21 parts per billion by volume (ppbv). Utilizing the analytes' concentrations, gas flow rates, air sampling flow rates, and atmospheric pressure, response factors (RFs), in units of ion counts per second per part per billion by volume (icps/ppbv), were calculated for each ion pair by using a least-square-fit algorithm to calculate the slope of its curve. The coefficient of determination was checked for each ion pair's RF to ensure that it was greater than 0.90. The RF of each analyte was used to quantify the target compounds in ambient air. The intermediate response factor (IRF) was calculated between pairs of calibrations and used to quantify target compounds in ambient air.

2.2.3 Transport Efficiency

The transport efficiency and residence time for the target compounds through the 300-foot length of corrugated Teflon[®] sampling hose was determined prior to and at the conclusion of indoor air monitoring activities each day. The transport efficiency was determined by introducing a known concentration of the target compounds into the proximal end and then into the distal end of the sampling hose. The signal intensity of each ion pair for each compound was measured in icps and the percent (%) transport efficiency calculated using the equation below:

$$\% \text{ transport efficiency} = \frac{\text{signal intensity at the distal end of the hose}}{\text{signal intensity at the proximal end of the hose}} \times 100$$

A transport efficiency of 85 percent is considered acceptable and results are summarized in Table 1.

The residence time is the interval, in seconds, it takes the air sample to travel the length of the sampling hose. The residence time, which reflects a time difference between the sampling and the instrument response, is incorporated in the offset. The offset, which is the total number of sequences acquired during the residence time, is applied to the monitoring files (Figures 2a to 6a and Figures 2b to 6b). Therefore, the observations and instrument responses are temporally coordinated.

2.2.4 TAGA Air Monitoring

TAGA monitoring was performed by continuously drawing air through the Teflon[®] hose at a flow-rate of approximately 1,500 mL/sec. The air was then passed through a glass splitter where the pressure gradient between the mass spectrometer core and the atmosphere causes a sample flow of approximately 10 mL/min into the ionization source through a heated transfer line. The flow into the TAGA source was controlled so that the ionization source pressure was maintained at an optimum value of approximately 2.6 torr. The remaining airflow was drawn through the air pump and vented from the TAGA bus.

Monitoring was performed in the parent/daughter ion-monitoring mode. As monitoring proceeded, the operator pressed letter keys (flags), alphabetically on a computer keyboard, to denote events or locations during the monitoring event. This information was also recorded on an event log sheet. The intensity of each parent/daughter ion pair monitored by the TAGA was recorded in a permanent file on the computer's hard drive. One set of recorded measurements of all the ion pairs is called a sequence.

At the beginning of each unit survey, a one-minute pre-entry ambient data segment was collected. At the operator's signal, the sampler then entered the unit while holding the distal end of the hose at breathing height. The sampler proceeded to each room in the unit where one-minute data segments were collected. After the rooms in the unit were monitored, a one-minute post-exit ambient data segment was collected. Upon completion of the one-minute post-exit ambient data segment, the instrumentation was challenged with the calibration standard, which was introduced at 30 mL/min (approximately 7 ppbv), to verify that the system was functioning properly.

2.3 Meteorological Monitoring

Data were collected from the Portable Meteorological Tower installed at the site on Mills Gap Road. Meteorological data, such as wind speed, wind direction, and rainfall, are averaged for each monitoring period, and summarized in Table 2. The compiled meteorological data are presented in Appendix B. Each entry in Appendix B represents a five minute average, ending at the reported time. The reported data for rainfall is an average of the data recorded during the monitoring period.

3.0 TAGA AIR MONITORING RESULTS

The TAGA was used to survey indoor air in the crawl space of residential units in the vicinity of the Mills Gap Road TCE Site. Two mobile monitoring surveys were also performed following a path selected by the work assignment manager (WAM). Additionally, an attempt was made to use the 300-foot hose to monitor ambient air in the vicinity of several springs down slope from the facility.

3.1 Unit Surveys

The TAGA was used to perform one-minute monitoring of the crawlspace underneath each unit. Floor plans were not required, and are, therefore, not provided. In some cases, the crawlspace

was entered through the house. In other cases, entry to the crawlspace was available from outside the house.

3.2 Outdoor Air Survey

The TAGA mobile laboratory was parked adjacent to the site fence, and the 300-foot hose was passed through the fence in an attempt to monitor ambient air in the vicinity of multiple springs located down a steep grade below the facility. Only one seep could be reached. (See Figure 2a)

3.3 Mobile Monitoring Paths

Figures 1a and 7a present the monitoring paths taken by the TAGA mobile laboratory as it traveled in the vicinity of the Mills Gap Road. The maps, representing the monitoring paths, are marked by letters. These letters are the "flags" that the TAGA operator placed into the file. These "flags" mark events and are carried through the rest of the data presentation.

3.4 TAGA File Event Summaries

Figures 1b, 2b, 3a through 6a, and 7b present the TAGA file event summaries. These are the observations made during the file acquisition by the TAGA operator, along with the times from the TAGA file and the letter "flags" used to mark the data, which are recorded by the TAGA computer.

3.5 Graphical Presentations

Figures 1c, 2c, 3b through 6b, and 7c are the graphical representations of the TAGA files. A graph of each target compound concentration is presented with ppbv plotted on the vertical axis, and time into the acquisition, in minutes, on the horizontal axis. The target compound concentration was calculated by averaging the concentrations obtained from the ion pairs that were monitored for each target compound. There are two horizontal lines on each graph. The lower line is set at the detection limit (DL) for the compound. The higher line is set at the concentration equal to the quantitation limit (QL) for the target compound. When high concentrations are represented, the lower DL line may not be readily discerned. Transient, momentary spikes above the QL line are occasionally observed. These spikes, electronic in nature, do not affect average concentrations. They may be distinguished from elevated concentrations because the spikes are only present for one sequence and are often only present for one ion pair of the monitored compound.

3.6 TAGA Target Compound Summaries

Figures 2d, and 3c through 6c present the TAGA target compound summaries. These figures contain the concentrations of the target compounds averaged over time, at the various locations logged into the TAGA file event summaries.

4.0 DISCUSSION OF RESULTS

The TAGA target compound summaries are represented in Figures 2d, and 3c through 6c. During each crawlspace survey, a one-minute average was measured in the crawlspace. Only the highest average concentrations above the QL are listed below.

During each mobile monitoring period, the TAGA mobile laboratory monitored continuously while moving along the roads in the vicinity of the Mills Gap Road TCE Site.

4.1 Mobile Monitoring at Mills Gap Road, File MGR002

Mobile monitoring was performed on 10 December 2007 at 17:25:40 and is represented in Figures 1a through 1c, starting at location A and ending at location P along the path depicted in Figure 1a. The average wind speed and direction on site during the monitoring period was 1.0 miles per hour (mph) from 302 degrees. There was no precipitation during the preceding hour. The highest instantaneous concentration for trichloroethene was 21 ppbv at 10.77 minutes, while driving on Mills Gap Road, between flags H and I, just after passing the Hidden Valley entrance, at Surrey Run. The instantaneous concentrations of tetrachloroethene was not detected above its quantitation limit.

4.2 Outdoor Air Survey, File MGR007

The slope extending downward from the Eastern side of the property line was surveyed on 11 December 2007 at 11:51:51 and is represented in Figures 2a through 2d. The average wind speed and direction on site during the monitoring period was 2.5 mph from 142 degrees. There was no precipitation during the preceding hour. The average concentration of trichloroethene was 0.20 ppbv at Seep A, between flags E and F. Tetrachloroethene was not detected above its quantitation limit.

4.3 Unit 12 Survey, File MGR010

Unit 12 was surveyed on 11 December 2007 at 14:58:07 and is represented in Figures 3a through 3c. The average wind speed and direction on site during the monitoring period was 2.9 mph from 119 degrees. There was no precipitation during the preceding hour. Trichloroethene and tetrachloroethene were not detected above their quantitation limits.

4.4 Unit 119 Survey, File MGR012

Unit 119 was surveyed on 11 December 2007 at 16:16:28 and is represented in Figures 4a through 4c. The average wind speed and direction on site during the monitoring period was 1.7 mph from 110 degrees. There was no precipitation during the preceding hour. Trichloroethene and tetrachloroethene were not detected above their quantitation limits.

4.5 Unit 113 Survey, File MGR013

Unit 113 was surveyed on 11 December 2007 at 16:55:35 and is represented in Figures 5a through 5c. The average wind speed and direction on site during the monitoring period was 2.4 mph from 89 degrees. There was no precipitation during the preceding hour. Trichloroethene and tetrachloroethene were not detected above their quantitation limits.

4.6 Unit 01 Survey, File MGR018

Unit 01 was surveyed on 12 December 2007 at 10:14:00 and is represented in Figures 6a through 6c. The average wind speed and direction on site during the monitoring period was 1.3 mph from 239 degrees. There was no precipitation during the preceding hour. The highest average concentration of trichloroethene was 0.23 ppbv in the crawlspace, between flags C and D. Tetrachloroethene was not detected above its quantitation limit.

4.7 Mobile Monitoring at Mills Gap Road, File MGR021

Mobile monitoring was performed on 12 December 2007 at 12:11:54 and is represented in Figures 7a through 7c, starting at location A and ending at location N along the path depicted in Figure 7a. The average wind speed and direction on site during the monitoring period was 6.2 mph from 310 degrees. There was no precipitation during the preceding hour. The highest instantaneous

concentration for trichloroethene was 0.49 ppbv at 12.837 minutes, while driving on Mills Gap Road, between flags K and L, just before passing the Hidden Valley entrance, at Surrey Run. The instantaneous concentrations of tetrachloroethene was not detected above its quantitation limit. The apparent instantaneous maximum for tetrachloroethene above its quantitation limit was for a single ion pair, and is associated with electronic interference.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The compound parent/daughter ion pairs used are listed below.

Compound	Parent Ion Mass	Daughter Ion Mass
Trichloroethene	130	95
Trichloroethene	132	95
Trichloroethene	132	97
Tetrachloroethene	164	129
Tetrachloroethene	166	129
Tetrachloroethene	166	131

Table 3 documents the RFs and IRFs generated during the calibration procedure for the individual ion pairs. Response Factors and Intermediate Response Factors were used to quantitate the ion pair concentrations.

The summaries of detection and quantitation limit data for the monitoring periods (Section 5.3 and Table 4) document the concentration, in ppbv, required for a compound's ion pair to be considered detectable and quantifiable during the specified monitoring period. The DL is defined as three times the standard deviation of the concentration for a compound's ion pair measured in an ambient air sample. The QL is defined as 10 times the standard deviation of the concentration for the same conditions.

The summaries of the target compound detection and quantitation limits measured during the monitoring periods (Section 5.4 and Table 4) document the concentration, in ppbv, required for the compound to be considered detectable and quantifiable. The detection and quantitation limits for a compound result from averaging the appropriate detection and quantitation limits of the compound's ion pairs.

5.1 Intermediate Response Factor for Ion Pairs

Response factors were generated from two calibration events, as described in the procedure (Section 2.2.2.). Table 3 contains the RFs in units of icps/ppbv. The initial and final RFs were used to calculate the IRFs, which were used to calculate the reported concentration results.

The following equation was used to calculate the IRFs found in Tables 3 and 4:

$$IRF = \frac{2(RF_1 \times RF_2)}{(RF_1 + RF_2)}$$

where:

IRF = Intermediate response factor (icps/ppbv)

RF₁ = The RF for an ion pair measured during the first calibration event (icps/ppbv)

RF₂ = The RF for the same ion pair measured during the second calibration event (icps/ppbv)

For example, the entry for the 130/95 ion pair of trichloroethene from Table 3 for files MGR011 and MGR014, 11 December 2007 is:

$$\begin{aligned} \text{RF}_1 &= 2909.0 \text{ icps/ppbv} \\ \text{RF}_2 &= 2841.2 \text{ icps/ppbv} \end{aligned}$$

therefore,

$$\text{IRF} = \frac{2(2909.0 \times 2841.2)}{(2909.0 + 2841.2)} = \frac{16,530,101}{5,750.2} = 2,874.7 \text{ icps/ppbv}$$

The result, 2,874.7 icps/ppbv, is the IRF reported in Table 3 and used in Table 4.

5.2 Error Bars

The potential maximum concentration percent deviations for each target compound are presented in Table 3 and are called “error bars” for simplicity. They represent the potential bias in the concentration due to changes in the sensitivity of the TAGA instrument. Errors bars were calculated using the following equation:

$$\text{error bar} = \frac{|\text{RF}_1 - \text{RF}_2|}{(\text{RF}_1 + \text{RF}_2)} \times 100$$

where:

error bar = Maximum concentration percent deviation
RF₁ = The RF for an ion pair measured during the first calibration event (icps/ppbv)
RF₂ = The RF for the same ion pair measured during the second calibration event (icps/ppbv)

For example, the entry for the 130/95 ion pair of trichloroethene from Table 3 for files MGR011 and MGR014, 11 December 2007 is:

$$\begin{aligned} \text{RF}_1 &= 2909.0 \text{ icps/ppbv} \\ \text{RF}_2 &= 2841.2 \text{ icps/ppbv} \end{aligned}$$

$$\text{error bar} = \frac{|2909.0 - 2841.2|}{(2909.0 + 2841.2)} \times 100 = 1.18\%$$

The % error bar calculated for the 130/95 ion pair of trichloroethene is 1.18% for files MGR011 and MGR014, 11 December 2007.

The above calculation was repeated for each ion pair. The error bars for each compound's ions were averaged to give a single value for the compound. This averaged error bar can be applied to the samples analyzed between the two calibrations of the monitoring period.

5.3 Ion Pair Detection and Quantitation Limits

The DLs and QLs were calculated using the standard deviation (SD) of the compound's ion pair intensity measured in an ambient air sample and its RF. The SD reflects the variability of the instrument's response to the ambient air sample.

The following equation was used to calculate the DLs found in Table 4:

$$DL = \frac{3 \times SD}{RF \text{ or IRF}}$$

where:

DL = Detection limit for an ion pair (ppbv)
 SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
 RF/IRF = Response/Intermediate response factor for an ion pair (icps/ppbv)

For example, the entry for the 130/95 ion pair of trichloroethene from Table 4, files MGR011 and MGR014, 11 December 2007 is:

SD = 24.693 icps
 IRF = 2874.7 icps/ppbv

$$DL = \frac{3 \times 24.693}{2874.7} = 0.0258 \text{ ppbv}$$

The following equation was used to calculate the QLs found in Table 4:

$$QL = \frac{10 \times SD}{RF \text{ or IRF}}$$

where:

QL = Quantitation limit concentration for an ion pair (ppbv)
 SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
 RF/IRF = Response/Intermediate response factor for an ion pair (icps/ppbv)

For example, the entry for the 130/95 ion pair of trichloroethene from Table 4, files MGR011 and MGR014, 11 December 2007 is:

SD = 24.693 icps
 IRF = 2874.7 icps/ppbv

$$QL = \frac{10 \times 24.693}{2874.7} = 0.0859 \text{ ppbv}$$

5.4 Compound Detection and Quantitation Limits

Averaging the respective DLs and QLs of the target compound's ion pairs found in Table 4 generated the DLs and QLs found in Table 4.

The following equation was used to calculate the compound's DL:

$$DL_c = \frac{DL_1 + DL_2 + \dots + DL_n}{n}$$

where:

- DL_c = Detection limit for a compound (ppbv)
- DL₁ = Detection limit for the first ion pair (ppbv)
- DL₂ = Detection limit for the second ion pair (ppbv)
- DL_n = Detection limit for the nth ion pair (ppbv)
- n = Number of ion pairs to be averaged

For example, using the entries for the 130/95, 132/95 and 132/97 ion pairs of trichloroethene from Table 4 for files MGR011 and MGR014, 11 December 2007 is:

$$DL_c = \frac{0.0258 + 0.0394 + 0.0264}{3} = \frac{0.0916}{3} = 0.0305 \text{ ppbv}$$

This result, 0.0305 ppbv, rounded to 0.031 ppbv is the DL for trichloroethene found in Table 4.

The following equation was used to calculate the compound's QL:

$$QL_c = \frac{QL_1 + QL_2 + \dots + QL_n}{n}$$

where:

- QL_c = Quantitation limit for a compound (ppbv)
- QL₁ = Quantitation limit for the first ion pair (ppbv)
- QL₂ = Quantitation limit for the second ion pair (ppbv)
- QL_n = Quantitation limit for the nth ion pair (ppbv)
- n = Number of ion pairs to be averaged

For example, using the entries for the 130/95, 132/95 and 132/97 ion pairs of trichloroethene from Table 4 for files MGR011 and MGR014, 11 December 2007 is:

$$QL_c = \frac{0.0859 + 0.131 + 0.0881}{3} = \frac{0.305}{3} = 0.102 \text{ ppbv}$$

This result, 0.102 ppbv, rounded to 0.10 ppbv is the QL for trichloroethene found in Table 4.

TABLES

TABLE 1
Summary of Transport Efficiencies Measured on 11 and 12 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Transport Efficiency for 11 December 2007 10:20:58 File: MGR005				
Start Sequence:		298	640	
End Sequence:		399	788	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Trichloroethene	130/95	25880.9	25013.1	96.6
Trichloroethene	132/95	7983.0	7863.6	98.5
Trichloroethene	132/97	16535.1	16065.3	97.2
Average Trichloroethene Transport Efficiency:				97.4
Tetrachloroethene	164/129	16416.3	16300.2	99.3
Tetrachloroethene	166/129	4676.2	4806.9	102.8
Tetrachloroethene	166/131	17098.2	16569.3	96.9
Average Tetrachloroethene Transport Efficiency:				99.7

Transport Efficiency for 11 December 2007 17:34:21 File: MGR015				
Start Sequence:		155	468	
End Sequence:		251	564	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Trichloroethene	130/95	20861.3	20098.7	96.3
Trichloroethene	132/95	5291.5	5293.3	100.0
Trichloroethene	132/97	11354.8	11149.6	98.2
Average Trichloroethene Transport Efficiency:				98.2
Tetrachloroethene	164/129	9480.0	9761.1	103.0
Tetrachloroethene	166/129	2369.3	2512.7	106.0
Tetrachloroethene	166/131	11735.5	11626.3	99.1
Average Tetrachloroethene Transport Efficiency:				102.7

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
% = Percent

TABLE 1 (continued)
Summary of Transport Efficiencies Measured on 11 and 12 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Transport Efficiency for 12 December 2007 09:38:51 File: MGR017				
Start Sequence:		194	567	
End Sequence:		292	668	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Trichloroethene	130/95	24179.5	22936.7	94.9
Trichloroethene	132/95	5924.6	5810.3	98.1
Trichloroethene	132/97	12819.4	12305.1	96.0
Average Trichloroethene Transport Efficiency:				96.3
Tetrachloroethene	164/129	9453.0	9454.4	100.0
Tetrachloroethene	166/129	2189.0	2347.0	107.2
Tetrachloroethene	166/131	12215.0	11803.0	96.6
Average Tetrachloroethene Transport Efficiency:				101.3

Transport Efficiency for 12 December 2007 10:48:19 File: MGR019				
Start Sequence:		199	676	
End Sequence:		394	780	
Compound	PM/DM	Proximal Intensity (icps)	Distal Intensity (icps)	Transport Efficiency (%)
Trichloroethene	130/95	22764.7	21638.4	95.0
Trichloroethene	132/95	5188.3	5194.7	100.1
Trichloroethene	132/97	11626.2	11465.4	98.6
Average Trichloroethene Transport Efficiency:				97.9
Tetrachloroethene	164/129	8033.5	8542.6	106.3
Tetrachloroethene	166/129	1633.1	1915.8	117.3
Tetrachloroethene	166/131	10753.5	10971.0	102.0
Average Tetrachloroethene Transport Efficiency:				108.6

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
% = Percent

TABLE 2
Summary of Meteorological Conditions during Monitoring, 10 through 12 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Date	File	Ws Average	Wd Average	Precipitation
12/10/2007	MGR002	1.0	302	0
12/11/2007	MGR007	2.5	142	0
12/11/2007	MGR010	2.9	119	0
12/11/2007	MGR012	1.7	110	0
12/11/2007	MGR013	2.4	89	0
12/12/2007	MGR018	1.3	239	0
12/12/2007	MGR021	6.2	310	0

The wind direction is the direction from which the wind is blowing.

Ws = Wind speed in miles per hour

Wd = Wind direction in degrees

TABLE 3
Response Factors and Error Bars Summary for 10 and 11 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Calibration Files: MGR001 and MGR003 on 10 December 2007 Used for Survey File: MGR002					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Trichloroethene	130/95	2438.5	3080.3	2722.1	11.6
Trichloroethene	132/95	771.94	970.46	859.89	11.4
Trichloroethene	132/97	1575.3	1962.8	1747.8	11.0
Average:					11
Tetrachloroethene	164/129	1826.2	2238.6	2011.5	10.1
Tetrachloroethene	166/129	528.12	646.16	581.21	10.1
Tetrachloroethene	166/131	1704.6	2096.8	1880.4	10.3
Average:					10
Calibration Files: MGR004 and MGR008 on 11 December 2007 Used for Survey File: MGR007					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Trichloroethene	130/95	3748.4	3112.8	3401.2	9.26
Trichloroethene	132/95	1222.7	969.73	1081.6	11.5
Trichloroethene	132/97	2494.8	1927.6	2174.8	12.8
Average:					11
Tetrachloroethene	164/129	2816.8	2138.9	2431.5	13.7
Tetrachloroethene	166/129	838.36	645.27	729.25	13.0
Tetrachloroethene	166/131	2788.9	2216.4	2469.9	11.4
Average:					13

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 3 (continued)
Response Factors and Error Bars Summary for 10 and 11 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Calibration Files: MGR011 and MGR014 on 11 December 2007 Used for Survey Files: MGR012 and MGR013					
Compound	PM/DM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Trichloroethene	130/95	2909.0	2841.2	2874.7	1.18
Trichloroethene	132/95	863.79	834.17	848.72	1.74
Trichloroethene	132/97	1749.1	1679.6	1713.6	2.03
Average:					1.6
Tetrachloroethene	164/129	1931.3	1830.6	1879.6	2.68
Tetrachloroethene	166/129	559.27	528.48	543.44	2.83
Tetrachloroethene	166/131	2009.4	1936.0	1972.0	1.86
Average:					2.5

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 4
Summary of Detection and Quantitation Limit Data for 10 through 12 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Calibration Files: MGR001 and MGR003 on 10 December 2007 Used for Survey File: MGR002					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Trichloroethene	130/95	2722.1	22.261	0.0245	0.0818
Trichloroethene	132/95	859.89	12.238	0.0427	0.142
Trichloroethene	132/97	1747.8	14.741	0.0253	0.0843
Average:				0.031	0.10
Tetrachloroethene	164/129	2011.5	18.018	0.0269	0.0896
Tetrachloroethene	166/129	581.21	11.986	0.0619	0.206
Tetrachloroethene	166/131	1880.4	17.271	0.0276	0.0918
Average:				0.039	0.13
Calibration Files: MGR004 and MGR008 on 11 December 2007 Used for Survey File: MGR007					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Trichloroethene	130/95	3401.2	39.225	0.0346	0.115
Trichloroethene	132/95	1081.6	17.933	0.0497	0.166
Trichloroethene	132/97	2174.8	31.044	0.0428	0.143
Average:				0.042	0.14
Tetrachloroethene	164/129	2431.5	20.166	0.0249	0.0829
Tetrachloroethene	166/129	729.25	10.600	0.0436	0.145
Tetrachloroethene	166/131	2469.9	29.787	0.0362	0.121
Average:				0.035	0.12

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

TABLE 4 (continued)
Summary of Detection and Quantitation Limit Data for 10 through 12 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Calibration File: MGR009 at 14:31:19 on 11 December 2007 Used for Survey File: MGR010					
Compound	PM/DM	Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Trichloroethene	130/95	2922.1	32.088	0.0329	0.110
Trichloroethene	132/95	871.78	11.155	0.0384	0.128
Trichloroethene	132/97	1775.9	15.028	0.0254	0.0846
Average:				0.032	0.11
Tetrachloroethene	164/129	1983.0	7.7172	0.0117	0.0389
Tetrachloroethene	166/129	576.04	3.0484	0.0159	0.0529
Tetrachloroethene	166/131	2046.0	11.063	0.0162	0.0541
Average:				0.015	0.049
Calibration Files: MGR011 and MGR014 on 11 December 2007 Used for Survey Files: MGR012 and MGR013					
Compound	PM/DM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Trichloroethene	130/95	2874.7	24.693	0.0258	0.0859
Trichloroethene	132/95	848.72	11.136	0.0394	0.131
Trichloroethene	132/97	1713.6	15.096	0.0264	0.0881
Average:				0.031	0.10
Tetrachloroethene	164/129	1879.6	12.313	0.0197	0.0655
Tetrachloroethene	166/129	543.44	5.2745	0.0291	0.0971
Tetrachloroethene	166/131	1972.0	11.814	0.0180	0.0599
Average:				0.022	0.074

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

TABLE 4 (continued)
Summary of Detection and Quantitation Limit Data for 10 through 12 December 2007
Mills Gap Road TCE Site
Skyland, NC
January 2008

Calibration File: MGR016 at 09:10:44 on 12 December 2007 Used for Survey File: MGR018					
Compound	PM/DM	Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Trichloroethene	130/95	3232.6	39.388	0.0366	0.122
Trichloroethene	132/95	958.86	20.873	0.0653	0.218
Trichloroethene	132/97	1953.8	25.121	0.0386	0.129
Average:				0.047	0.16
Tetrachloroethene	164/129	2036.7	13.365	0.0197	0.0656
Tetrachloroethene	166/129	575.04	5.8812	0.0307	0.102
Tetrachloroethene	166/131	2147.0	17.134	0.0239	0.0798
Average:				0.025	0.083
Calibration File: MGR020 at 11:28:19 on 12 December 2007 Used for Survey File: MGR021					
Compound	PM/DM	Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Trichloroethene	130/95	2838.6	27.067	0.0286	0.0954
Trichloroethene	132/95	800.83	9.1612	0.0343	0.114
Trichloroethene	132/97	1679.0	15.533	0.0278	0.0925
Average:				0.030	0.10
Tetrachloroethene	164/129	1689.7	7.5022	0.0133	0.0444
Tetrachloroethene	166/129	448.95	3.0484	0.0204	0.0679
Tetrachloroethene	166/131	1845.6	7.0566	0.0115	0.0382
Average:				0.015	0.050

PM/DM = Parent Mass/Daughter Mass
icps = ion counts per second
ppbv = parts per billion by volume

FIGURES

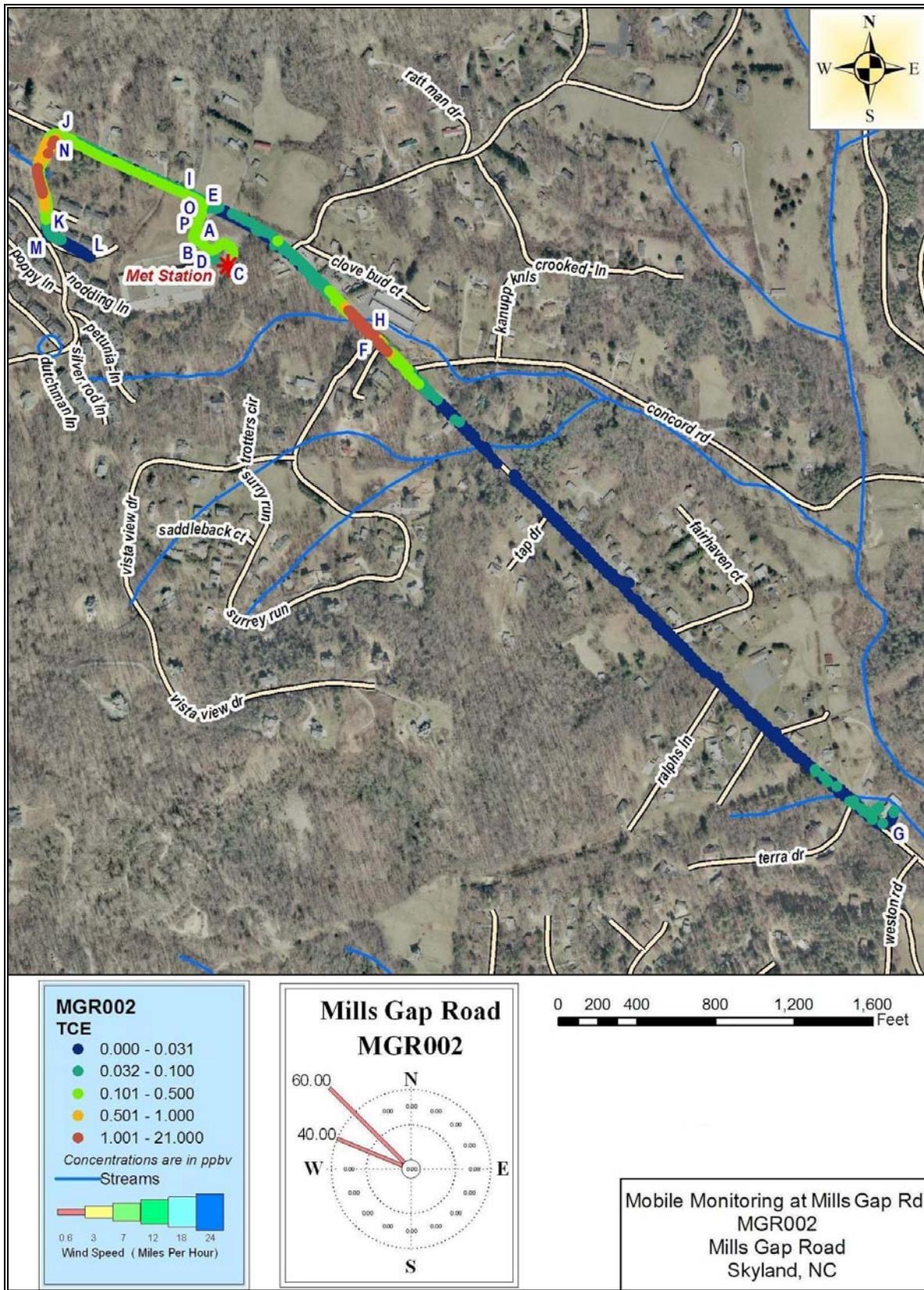


Figure 1a Mobile Monitoring Path at Mills Gap Road, MGR002

Figure 1b

TAGA File Event Summary			
File: MGR002 Acquired on 10 December 2007 at 17:25:40			
Title: Mobile Monitoring at Mills Gap Road			
Flag	Offset Time	Offset Sequence	Description
A	1.6	160	Start monitoring in the parking lot
B	2.0	199	Turning right in the parking lot
C	2.8	277	Executing U-turn at the met station
D	3.5	344	Turning right toward main gate
E	4.6	451	Turning right onto Mills Gap Road
F	5.9	580	Passing Hidden Valley entrance at Surrey Run
G	7.9	772	Turning around at gas station at Terra Drive
H	10.6	1041	Passing Hidden Valley entrance at Surrey Run
I	11.7	1142	Passing the site
J	12.0	1176	Turning left onto South Side Village Drive
K	13.5	1324	Turning left onto Jasmine Lane
L	14.5	1417	Moving backwards at the end of Jasmine Lane
M	20.3	1980	Turning onto South Side Village Drive
N	23.9	2337	Turning right onto Mills Gap Road
O	24.6	2400	Turning right into the site
P	25.5	2497	Stopping mobile monitoring in the parking lot

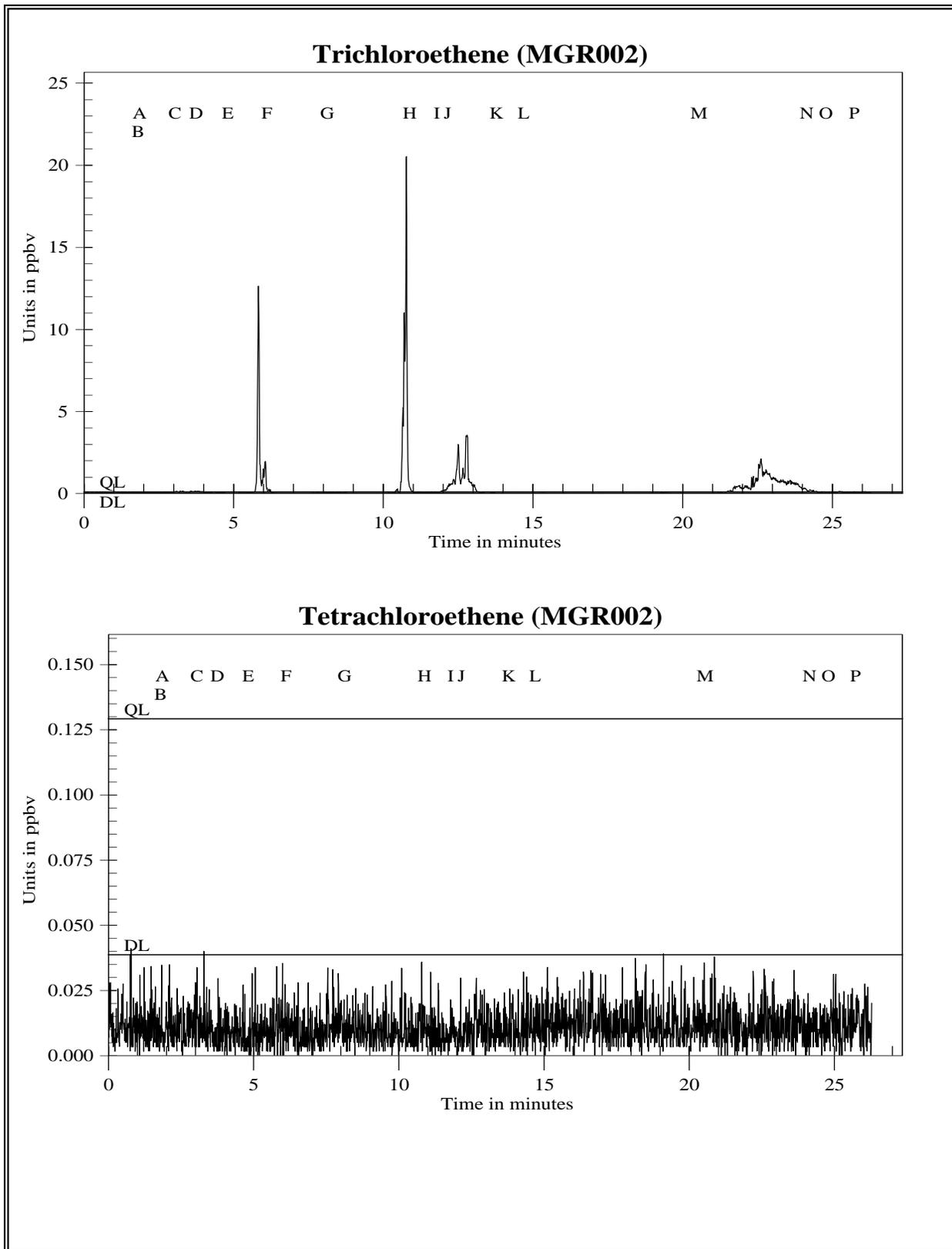


Figure 1c Mobile Monitoring at Mills Gap Road for Trichloroethene and Tetrachloroethene



Figure 2a Outdoor Air Survey at Mills Gap Road, MGR07

Figure 2b

TAGA File Event Summary File: MGR007 Acquired on 11 December 2007 at 11:51:51 Title: Outdoor Air Survey			
Flag	Offset Time	Offset Sequence	Description
B	3.6	354	Start of the pre-run ambient
C	4.7	458	End of the pre-run ambient
D	6.8	668	Crossing Seep A fenceline
E	7.8	761	Start of Seep A
F	9.4	919	End of Seep A
G	11.8	1157	Start of the post-run ambient
H	12.8	1254	End of the post-run ambient
I	13.3	1304	Start of the 30 mL/min spike
J	14.8	1450	End of the 30 mL/min spike

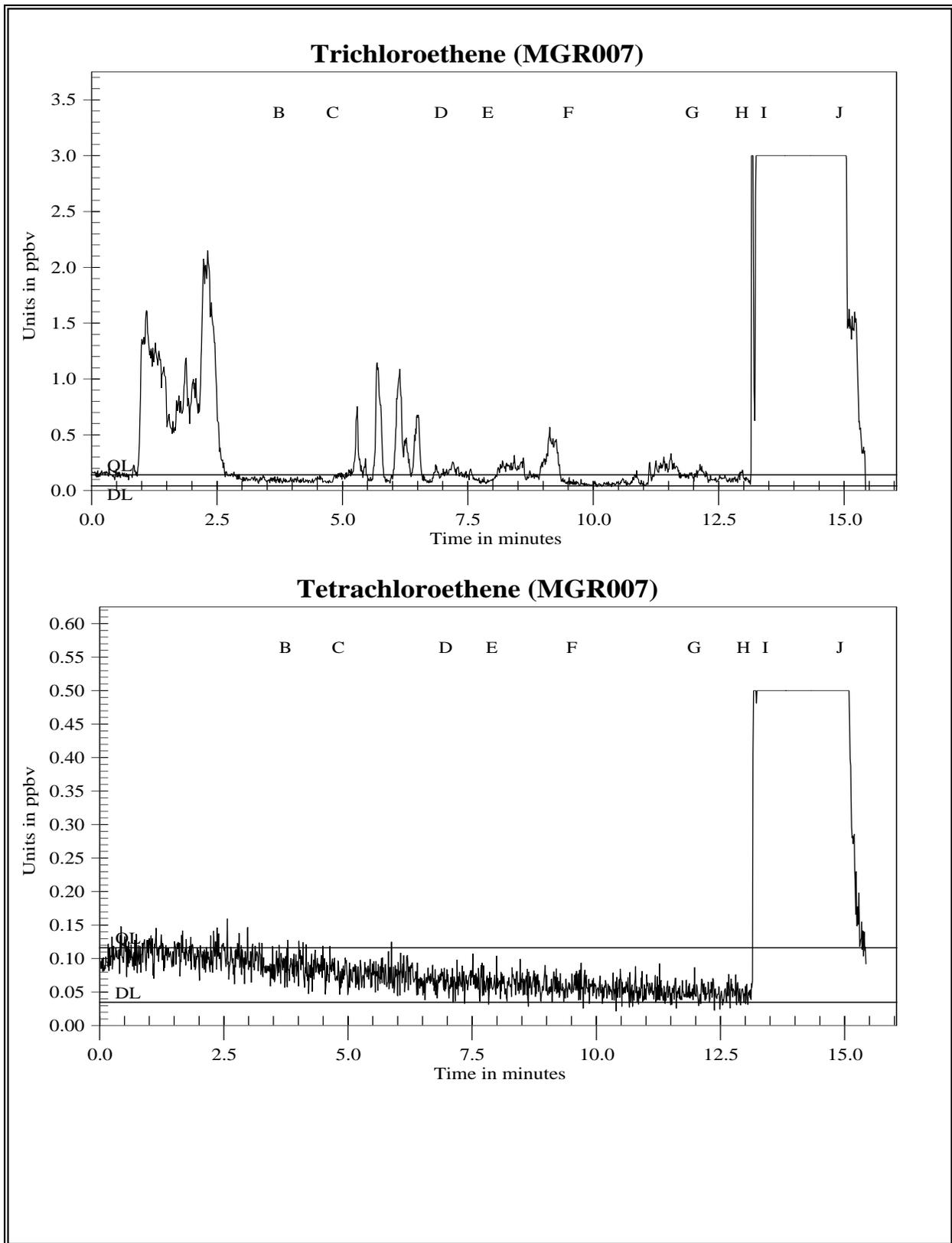


Figure 2c Outdoor Air Survey for Trichloroethene and Tetrachloroethene

Figure 2d

TAGA Target Compound Summary File: MGR007 Acquired on 11 December 2007 at 11:51:51			
		Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.042	0.035
Quantitation Limits - QL:		0.14	0.12
Flags	Description	Trichloroethene	Tetrachloroethene
B - C	Pre-run ambient	0.092J	0.087J
E - F	Seep A	0.20	0.061J
G - H	Post-run ambient	0.12J	0.049J
I - J	30 mL/min spike	6.2	5.1

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 3a

TAGA File Event Summary			
File: MGR010 Acquired on 11 December 2007 at 14:58:07			
Title: Crawl Space Monitoring in Unit 12			
Flag	Offset Time	Offset Sequence	Description
A	1.8	181	Start of the pre-entry ambient
B	2.8	274	End of the pre-entry ambient
C	7.1	694	Entering unit 12
D	7.3	712	Entering the basement
E	7.8	767	Start of the crawl space
F	9.1	888	End of the crawl space
G	9.6	940	Exiting the basement
H	9.8	961	Exiting the unit
I	11.0	1074	Start of the post-exit ambient
J	18.8	1842	End of the post-exit ambient
K	19.9	1946	Start of the 30 mL/min spike
L	21.3	2086	End of the 30 mL/min spike

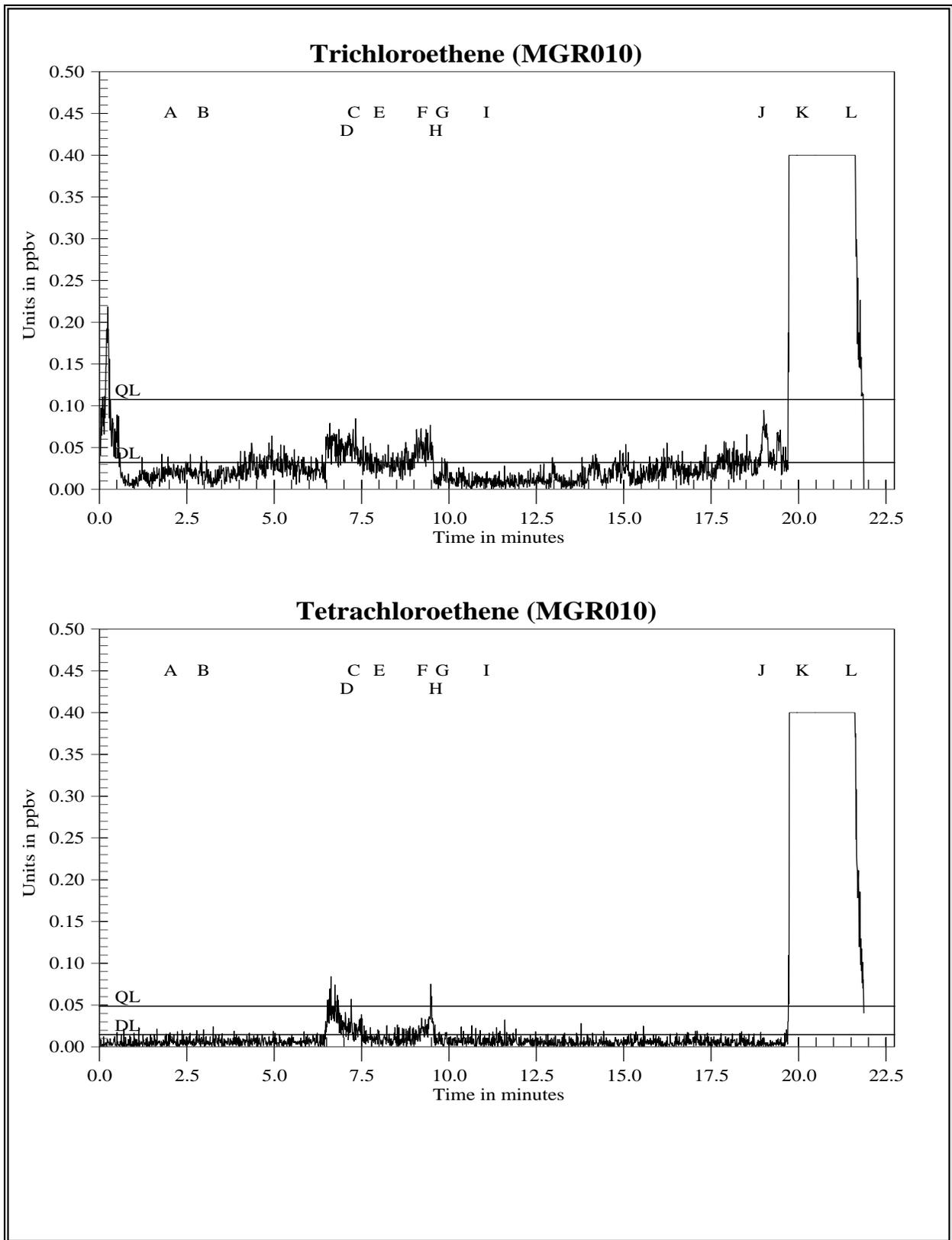


Figure 3b Crawspace Monitoring in Unit 12 for Trichloroethene and Tetrachloroethene

Figure 3c

TAGA Compound Survey Summary for Unit 12 File: MGR010 Acquired on 11 December 2007 at 14:58:07			
		Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.032	0.015
Quantitation Limits - QL:		0.11	0.049
Flags	Description	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	DL=0.032	DL=0.015
E - F	Crawlspace	DL=0.032	DL=0.015
I - J	Post-exit ambient	DL=0.032	DL=0.015
K - L	30 mL/min spike	6.4	5.3

Concentrations are given in parts per billion by volume

Figure 4a

TAGA File Event Summary			
File: MGR012 Acquired on 11 December 2007 at 16:16:28			
Title: Crawl Space Monitoring in Unit 119			
Flag	Offset Time	Offset Sequence	Description
A	1.8	173	Start of the pre-run ambient
B	2.7	269	End of the pre-run ambient
C	4.3	417	Start of the crawlspace at unit 119
D	5.4	533	End of the crawlspace at unit 119
E	6.8	663	Start of the post-run ambient
F	8.0	787	End of the post-run ambient
G	10.3	1009	Start of the 30 mL/min spike
H	11.8	1155	End of the 30 mL/min spike

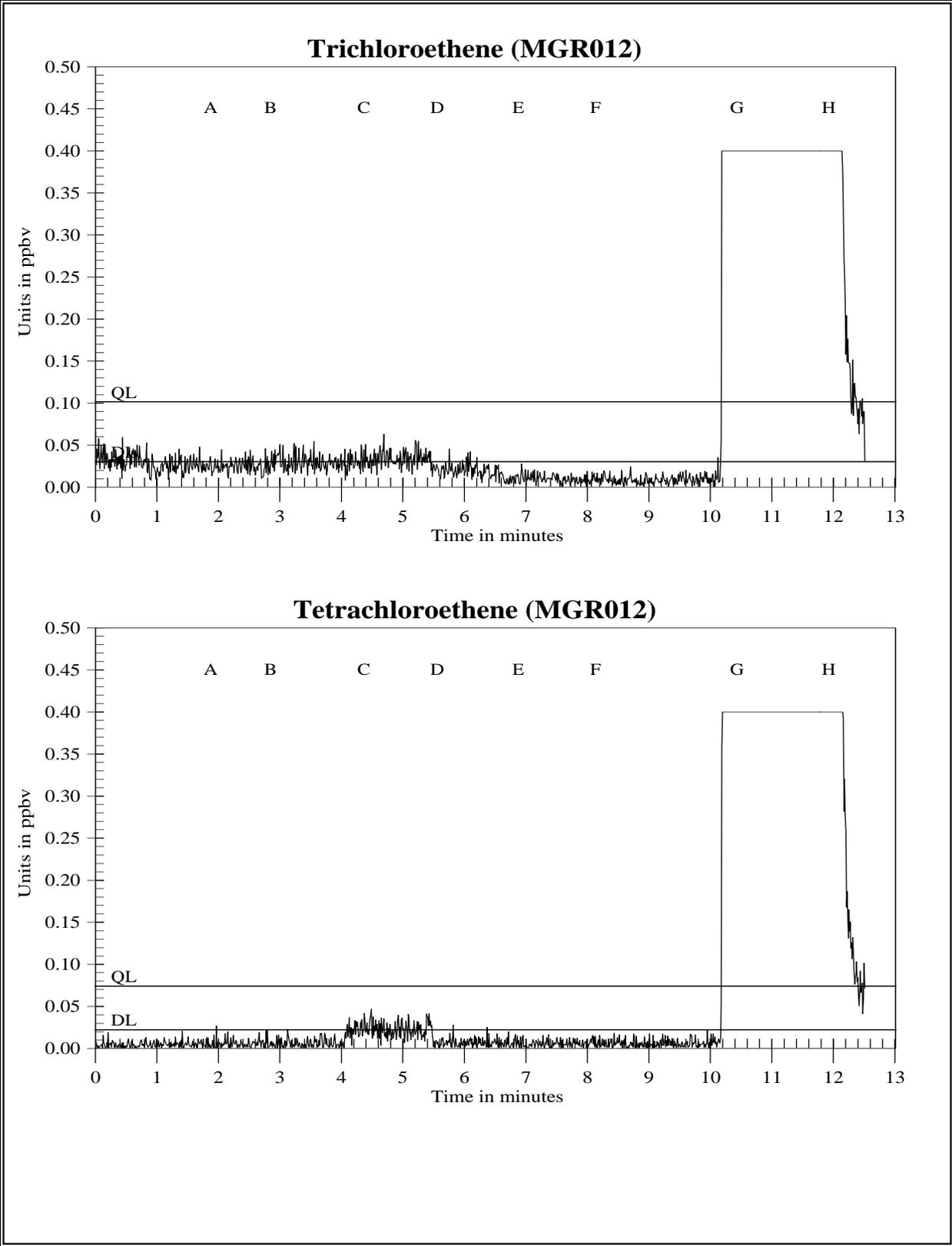


Figure 4b Crawlspace Monitoring in Unit 119 for Trichloroethene and Tetrachloroethene

Figure 4c

TAGA Compound Survey Summary for Unit 119 File: MGR012 Acquired on 11 December 2007 at 16:16:28			
		Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.031	0.022
Quantitation Limits - QL:		0.10	0.074
Flags	Description	Trichloroethene	Tetrachloroethene
A - B	Pre-run ambient	DL=0.031	DL=0.022
C - D	Crawlspace at unit 119	0.034J	0.023J
E - F	Post-run ambient	DL=0.031	DL=0.022
G - H	30 mL/min spike	6.5	5.3

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 5a

TAGA File Event Summary			
File: MGR013 Acquired on 11 December 2007 at 16:55:35			
Title: Crawl Space Monitoring in Unit 113			
Flag	Offset Time	Offset Sequence	Description
A	1.8	176	Start of the pre-run ambient
B	2.8	276	End of the pre-run ambient
C	4.0	391	Entering unit 113
D	4.4	432	Entering the basement
E	5.4	533	Start of the crawlspace
F	6.5	634	End of the crawlspace
G	7.6	740	Exiting the basement
H	7.9	769	Exiting the unit
I	8.6	839	Start of the post-run ambient
J	10.2	1002	End of the post-run ambient
K	10.9	1067	Start of the 30 mL/min spike
L	12.4	1215	End of the 30 mL/min spike

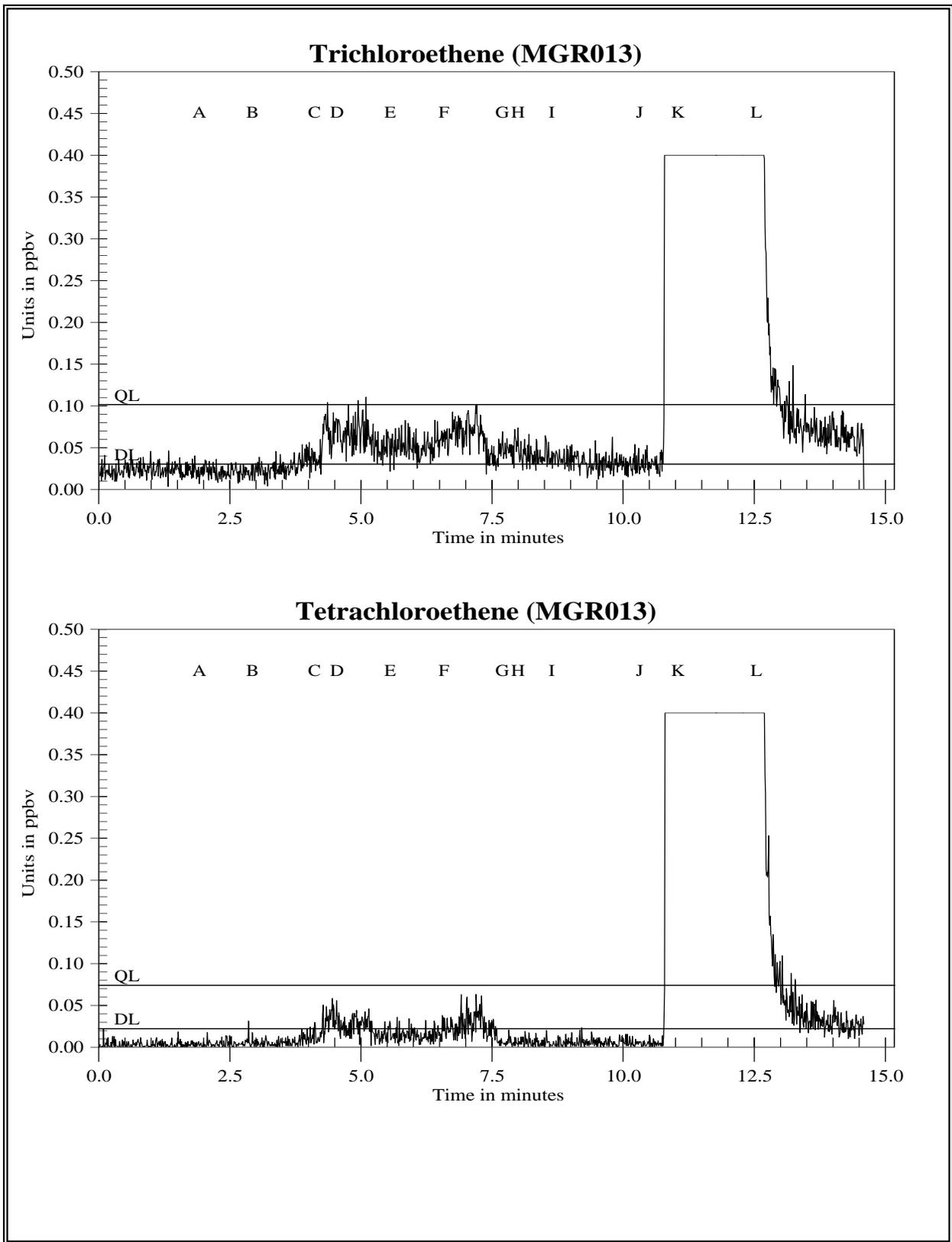


Figure 5b Crawlspace Monitoring in Unit 113 for Trichloroethene and Tetrachloroethene

Figure 5c

TAGA Compound Survey Summary for Unit 113 File: MGR013 Acquired on 11 December 2007 at 16:55:35			
		Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.031	0.022
Quantitation Limits - QL:		0.10	0.074
Flags	Description	Trichloroethene	Tetrachloroethene
A - B	Pre-run ambient	DL=0.031	DL=0.022
E - F	Crawlspace	0.052J	DL=0.022
I - J	Post-run ambient	0.033J	DL=0.022
K - L	30 mL/min spike	6.5	5.3

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

Figure 6a

TAGA File Event Summary			
File: MGR018 Acquired on 12 December 2007 at 10:14:00			
Title: Crawl Space Monitoring in Unit 01			
Flag	Offset Time	Offset Sequence	Description
A	1.9	184	Start of the pre-entry ambient
B	2.9	283	End of the pre-entry ambient
C	4.4	435	Start of Unit 01 crawlspace
D	5.5	534	End of Unit 01 crawlspace
E	6.3	619	Start of the South side of the crawlspace
F	7.4	720	End of the South side of the crawlspace
G	8.9	874	Start of the post-exit ambient
H	10.4	1013	End of the post-exit ambient
I	11.5	1127	Start of the 30 mL/min spike
J	13.0	1273	End of the 30 mL/min spike

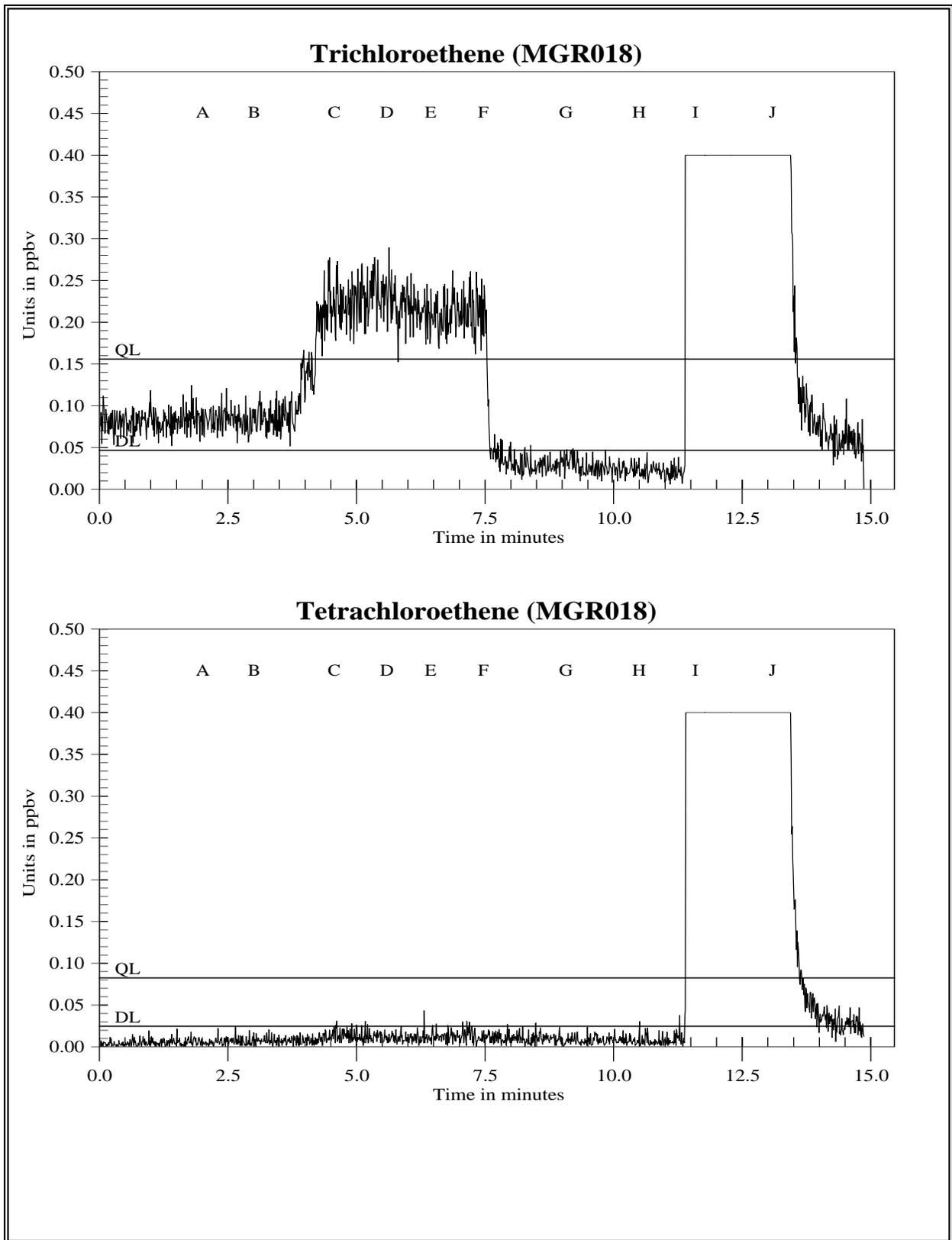


Figure 6b Crawlspace Monitoring in Unit 01 for Trichloroethene and Tetrachloroethene

Figure 6c

TAGA Compound Survey Summary for Unit 01 File: MGR018 Acquired on 12 December 2007 at 10:14:00			
		Trichloroethene	Tetrachloroethene
Detection Limits - DL:		0.047	0.025
Quantitation Limits - QL:		0.16	0.083
Flags	Description	Trichloroethene	Tetrachloroethene
A - B	Pre-entry ambient	0.084J	DL=0.025
C - D	Crawlspace	0.23	DL=0.025
E - F	South side of the crawlspace	0.21	DL=0.025
G - H	Post-exit ambient	DL=0.047	DL=0.025
I - J	30 mL/min spike	6.0	4.6

Concentrations are given in parts per billion by volume

J = Concentration detected below the quantitation limit

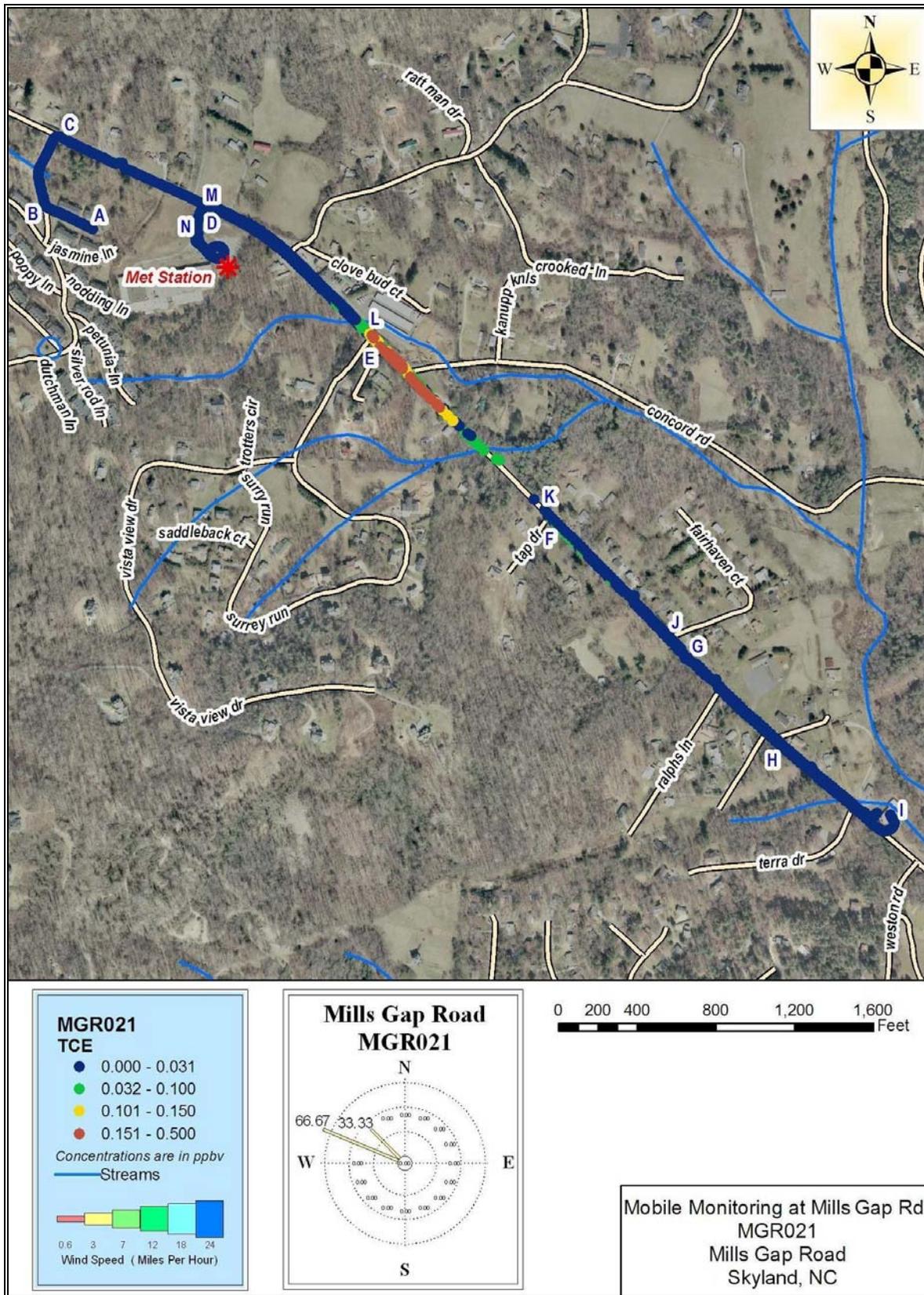


Figure 7a Mobile Monitoring at Mills Gap Road, MGR021

Figure 7b

TAGA File Event Summary			
File: MGR021 Acquired on 12 December 2007 at 12:11:54			
Title: Mobile Monitoring at Mills Gap Road			
Flag	Time	Sequence	Description
A	2.2	215	Start of the monitoring on Silk Tree Lane moving west
B	3.1	308	Turning right onto Southside Village Drive
C	5.0	487	Turning right onto Mills Gap Road
D	5.9	575	Passing the site entrance
E	6.8	669	Passing Hidden Valley entrance at Surrey Run
F	7.9	775	Passing Tap Drive
G	8.5	834	Passing Fairhaven Court
H	8.9	870	Passing Paul Williams Lane
I	9.5	928	Turning around at Shell gas station
J	11.2	1099	Passing Fairhaven Court
K	11.9	1168	Passing Tap Drive
L	13.0	1275	Passing Hidden Valley entrance at Surrey Run
M	14.4	1409	Entering the site
N	16.2	1581	End monitoring in the parking lot

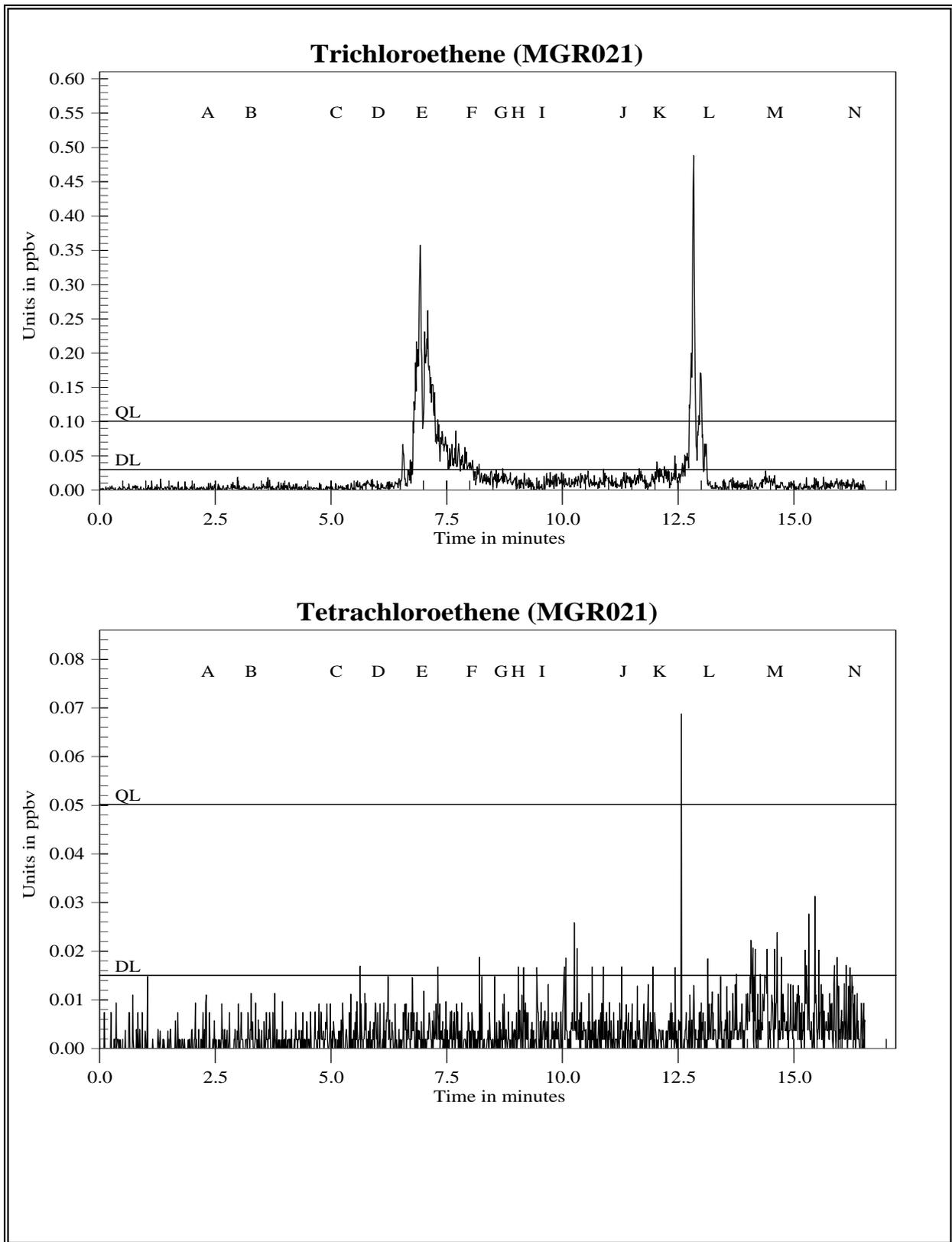


Figure 7c Mobile Monitoring at Mills Gap Road for Trichloroethene and Tetrachloroethene

APPENDIX A

Standard Gas Cylinder Certification

Mills Gap Road TCE Site

Final Analytical TAGA Report

January 2008



3434 Route 22 West, Branchburg, New Jersey 08876 USA
 ISO 9001:2000

SHIPPED FROM: 80 INDUSTRIAL DRIVE ALPHA, NJ. 08865

SHIPPED TO: Lockheed Martin / REAC
 GSA Raritan Depot, Bldg. 209
 2890 Woodbridge Ave.
 Edison, NJ 08837

**CERTIFICATE
 OF
 ANALYSIS**

SGI ORDER # :	117006	CYLINDER # :	CC-256091
ITEM# :	1	CYLINDER PRES:	1365 psig
CERTIFICATION DATE:	10/01/2007	CYLINDER VALVE:	CGA 350
P.O.# :	Verbal-Chuck	PRODUCT EXPIRATION DATE:	10/01/2008
BLEND TYPE:	CERTIFIED		

ANALYTICAL ACCURACY: +/- 2%

COMPONENT	REQUESTED GAS CONC	ANALYSIS
Vinyl Chloride	20.0 ppm	20.4 ppm
1,1-Dichloroethene	20.0 ppm	20.9 ppm
Benzene	20.0 ppm	20.5 ppm
Trichloroethylene	20.0 ppm	20.3 ppm
Toluene	20.0 ppm	20.3 ppm
Tetrachloroethylene	20.0 ppm	20.3 ppm
p-Xylene	10.0 ppm	10.1 ppm
m-Xylene	10.0 ppm	10.1 ppm
o-Xylene	10.0 ppm	10.1 ppm
Nitrogen	Balance	Balance

ANALYST: *Lou Lorenzetti*
 Lou Lorenzetti

DATE: 10/01/2007

Tel: +1 908-252-9300 Fax: +1 908-252-0811
 www.spectragases.com

APPENDIX B

Compiled Meteorological Data

Mills Gap Road TCE Site

Final Analytical TAGA Report

January 2008

**Local Climatological Data-Hourly Observations Table
Mills Gap Road TCE Site, Skyland, NC**

Elevation: 2440 ft. above sea level

Latitude: 35 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/10/2007	16:00	69	52	4.2	348	27.66	0
12/10/2007	16:05	69	53	3.7	329	27.67	0.01
12/10/2007	16:10	69	53	3.9	331	27.68	0
12/10/2007	16:15	69	53	3.6	329	27.67	0
12/10/2007	16:20	69	53	3.5	328	27.68	0
12/10/2007	16:25	68	53	2.9	305	27.68	0
12/10/2007	16:30	68	53	4.1	287	27.68	0
12/10/2007	16:35	68	52	3.5	269	27.67	0
12/10/2007	16:40	68	52	4.2	323	27.67	0
12/10/2007	16:45	68	53	3.5	310	27.67	0
12/10/2007	16:50	68	53	3.5	318	27.66	0
12/10/2007	16:55	68	53	3.0	330	27.67	0
12/10/2007	17:00	67	53	3.9	313	27.66	0
12/10/2007	17:05	67	53	2.4	323	27.66	0
12/10/2007	17:10	67	54	2.2	312	27.66	0
12/10/2007	17:15	66	55	1.4	333	27.66	0
12/10/2007	17:20	66	56	1.4	350	27.66	0
12/10/2007	17:25	65	58	1.2	308	27.66	0
12/10/2007	17:30	64	61	1.3	304	27.66	0
12/10/2007	17:35	62	64	1.1	312	27.66	0
12/10/2007	17:40	61	66	0.9	317	27.66	0
12/10/2007	17:45	60	69	0.8	293	27.66	0
12/10/2007	17:50	59	70	1.0	284	27.66	0
12/10/2007	17:55	59	71	0.9	326	27.66	0
12/10/2007	18:00	59	71	1.0	288	27.66	0
12/10/2007	18:05	59	72	0.7	326	27.66	0
12/10/2007	18:10	59	74	0.8	288	27.66	0
12/10/2007	18:15	59	74	0.7	324	27.66	0
12/10/2007	18:20	58	75	0.7	307	27.66	0
12/10/2007	18:25	58	75	0.7	289	27.66	0
12/10/2007	18:30	58	76	1.0	280	27.66	0
12/10/2007	18:35	58	77	0.7	297	27.66	0
12/10/2007	18:40	58	77	1.3	323	27.66	0
12/10/2007	18:45	58	77	0.9	309	27.66	0
12/10/2007	18:50	58	77	1.1	333	27.66	0
12/10/2007	18:55	58	78	1.5	337	27.66	0
12/10/2007	19:00	59	76	0.9	295	27.66	0
12/10/2007	19:05	58	78	0.8	325	27.66	0
12/10/2007	19:10	57	79	0.7	291	27.66	0
12/10/2007	19:15	57	80	0.6	273	27.66	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/10/2007	19:20	58	79	1.9	296	27.66	0
12/10/2007	19:25	58	80	1.7	311	27.66	0
12/10/2007	19:30	57	80	0.9	316	27.66	0
12/10/2007	19:35	57	82	0.8	311	27.66	0
12/10/2007	19:40	57	82	1.9	299	27.66	0
12/10/2007	19:45	57	80	0.8	338	27.66	0
12/10/2007	19:50	57	81	1.9	297	27.66	0
12/10/2007	19:55	57	80	1.2	301	27.66	0
12/10/2007	20:00	57	80	1.3	319	27.66	0
12/10/2007	20:05	57	80	0.9	331	27.66	0
12/10/2007	20:10	57	81	1.2	296	27.66	0
12/10/2007	20:15	56	81	0.7	302	27.66	0
12/10/2007	20:20	56	82	0.9	314	27.66	0
12/10/2007	20:25	56	83	0.6	7	27.66	0
12/10/2007	20:30	55	83	0.6	17	27.66	0
12/10/2007	20:35	55	83	0.7	48	27.66	0
12/10/2007	20:40	55	84	0.6	139	27.66	0
12/10/2007	20:45	55	85	0.6	77	27.66	0
12/10/2007	20:50	55	84	0.6	340	27.66	0
12/10/2007	20:55	54	84	0.6	327	27.66	0
12/10/2007	21:00	54	85	0.6	8	27.66	0
12/10/2007	21:05	54	85	0.6	24	27.66	0
12/10/2007	21:10	54	86	0.7	128	27.66	0
12/10/2007	21:15	55	86	0.6	104	27.66	0
12/10/2007	21:20	54	85	0.6	337	27.66	0
12/10/2007	21:25	54	85	0.6	328	27.66	0
12/10/2007	21:30	54	86	0.7	240	27.66	0
12/10/2007	21:35	54	85	0.6	243	27.66	0
12/10/2007	21:40	54	86	0.6	191	27.66	0
12/10/2007	21:45	54	85	0.9	122	27.66	0
12/10/2007	21:50	53	85	1.1	125	27.66	0
12/10/2007	21:55	52	85	0.6	127	27.66	0
12/10/2007	22:00	52	87	0.6	75	27.66	0
12/10/2007	22:05	52	87	0.6	75	27.66	0
12/10/2007	22:10	52	89	0.6	96	27.66	0
12/10/2007	22:15	52	89	0.6	212	27.66	0
12/10/2007	22:20	52	88	0.6	174	27.66	0
12/10/2007	22:25	52	88	0.6	177	27.66	0
12/10/2007	22:30	52	89	0.6	267	27.66	0
12/10/2007	22:35	53	89	0.6	230	27.66	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/10/2007	22:40	53	89	0.6	199	27.66	0
12/10/2007	22:45	53	89	0.6	200	27.66	0
12/10/2007	22:50	53	89	0.6	266	27.66	0
12/10/2007	22:55	53	88	0.6	275	27.66	0
12/10/2007	23:00	53	88	0.6	310	27.66	0
12/10/2007	23:05	52	89	0.6	247	27.66	0
12/10/2007	23:10	53	89	0.6	220	27.66	0
12/10/2007	23:15	53	89	0.6	153	27.66	0
12/10/2007	23:20	52	88	0.6	131	27.66	0
12/10/2007	23:25	51	88	0.6	142	27.66	0
12/10/2007	23:30	51	89	0.7	140	27.66	0
12/10/2007	23:35	51	89	1.3	126	27.66	0
12/10/2007	23:40	51	89	0.6	120	27.66	0
12/10/2007	23:45	51	89	0.6	142	27.66	0
12/10/2007	23:50	51	90	0.6	158	27.66	0
12/10/2007	23:55	51	90	0.7	106	27.66	0
12/11/2007	0:00	51	90	0.6	127	27.66	0
12/11/2007	0:05	51	89	1.6	133	27.66	0
12/11/2007	0:10	50	89	0.7	144	27.66	0
12/11/2007	0:15	50	90	0.9	160	27.65	0
12/11/2007	0:20	50	90	0.6	165	27.65	0
12/11/2007	0:25	50	90	0.9	157	27.65	0
12/11/2007	0:30	50	90	1.6	146	27.64	0
12/11/2007	0:35	49	90	0.8	143	27.64	0
12/11/2007	0:40	50	91	0.6	144	27.64	0
12/11/2007	0:45	50	91	0.6	132	27.63	0
12/11/2007	0:50	50	91	0.6	127	27.63	0
12/11/2007	0:55	50	90	0.6	123	27.63	0
12/11/2007	1:00	50	90	0.6	125	27.63	0
12/11/2007	1:05	50	90	0.6	125	27.63	0
12/11/2007	1:10	49	90	0.9	128	27.63	0
12/11/2007	1:15	49	90	0.8	132	27.63	0
12/11/2007	1:20	48	90	0.6	121	27.63	0
12/11/2007	1:25	49	91	2.0	26	27.63	0
12/11/2007	1:30	50	91	0.7	69	27.63	0
12/11/2007	1:35	50	91	1.1	139	27.63	0
12/11/2007	1:40	50	91	0.8	150	27.63	0
12/11/2007	1:45	50	91	0.6	147	27.63	0
12/11/2007	1:50	50	91	0.7	137	27.63	0
12/11/2007	1:55	49	91	0.8	137	27.63	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	2:00	49	91	0.6	135	27.63	0
12/11/2007	2:05	49	91	0.6	135	27.63	0
12/11/2007	2:10	49	91	0.6	131	27.63	0
12/11/2007	2:15	50	91	0.6	141	27.63	0
12/11/2007	2:20	50	91	0.7	126	27.63	0
12/11/2007	2:25	49	91	0.9	325	27.63	0
12/11/2007	2:30	49	91	0.6	247	27.63	0
12/11/2007	2:35	49	91	0.6	234	27.63	0
12/11/2007	2:40	49	91	0.6	211	27.63	0
12/11/2007	2:45	49	91	1.1	233	27.63	0
12/11/2007	2:50	49	90	1.1	289	27.63	0
12/11/2007	2:55	48	90	0.7	233	27.63	0
12/11/2007	3:00	48	91	0.9	217	27.63	0
12/11/2007	3:05	49	91	0.6	210	27.63	0
12/11/2007	3:10	49	91	0.7	158	27.63	0
12/11/2007	3:15	48	91	1.2	131	27.64	0
12/11/2007	3:20	48	91	0.8	132	27.63	0
12/11/2007	3:25	48	91	0.6	124	27.63	0
12/11/2007	3:30	48	91	0.7	149	27.64	0
12/11/2007	3:35	48	91	0.6	140	27.64	0
12/11/2007	3:40	48	91	0.6	127	27.63	0
12/11/2007	3:45	48	91	0.6	130	27.63	0
12/11/2007	3:50	49	91	0.6	138	27.63	0
12/11/2007	3:55	49	91	0.6	138	27.63	0
12/11/2007	4:00	49	91	0.8	137	27.63	0
12/11/2007	4:05	49	91	0.9	118	27.63	0
12/11/2007	4:10	49	91	1.0	146	27.63	0
12/11/2007	4:15	48	91	0.9	129	27.63	0
12/11/2007	4:20	47	91	0.6	125	27.63	0
12/11/2007	4:25	48	91	0.6	195	27.63	0
12/11/2007	4:30	49	92	0.6	152	27.63	0
12/11/2007	4:35	49	91	0.8	129	27.63	0
12/11/2007	4:40	48	91	0.6	129	27.63	0
12/11/2007	4:45	48	91	1.3	255	27.63	0
12/11/2007	4:50	47	91	1.2	286	27.63	0
12/11/2007	4:55	47	91	0.8	248	27.63	0
12/11/2007	5:00	47	91	0.6	246	27.63	0
12/11/2007	5:05	47	91	0.6	237	27.63	0
12/11/2007	5:10	47	91	0.6	215	27.63	0
12/11/2007	5:15	47	91	1.0	289	27.63	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	5:20	48	91	0.6	153	27.63	0
12/11/2007	5:25	48	91	0.6	131	27.63	0
12/11/2007	5:30	48	91	0.6	122	27.63	0
12/11/2007	5:35	48	91	0.6	179	27.63	0
12/11/2007	5:40	47	91	0.6	180	27.63	0
12/11/2007	5:45	47	91	0.6	121	27.63	0
12/11/2007	5:50	47	91	0.7	294	27.64	0
12/11/2007	5:55	47	91	0.6	182	27.64	0
12/11/2007	6:00	47	91	0.6	158	27.64	0
12/11/2007	6:05	47	91	0.6	159	27.64	0
12/11/2007	6:10	47	91	0.6	151	27.64	0
12/11/2007	6:15	47	91	0.6	82	27.64	0
12/11/2007	6:20	47	91	0.6	175	27.64	0
12/11/2007	6:25	47	91	0.8	278	27.65	0
12/11/2007	6:30	47	91	0.6	249	27.65	0
12/11/2007	6:35	47	91	0.6	216	27.65	0
12/11/2007	6:40	47	91	0.6	197	27.65	0
12/11/2007	6:45	47	91	0.6	129	27.65	0
12/11/2007	6:50	46	91	0.9	135	27.65	0
12/11/2007	6:55	46	91	1.0	148	27.65	0
12/11/2007	7:00	46	91	0.6	140	27.65	0
12/11/2007	7:05	46	91	0.8	139	27.65	0
12/11/2007	7:10	46	91	1.0	135	27.65	0
12/11/2007	7:15	46	91	0.6	129	27.65	0
12/11/2007	7:20	46	91	0.6	130	27.65	0
12/11/2007	7:25	46	91	0.6	130	27.65	0
12/11/2007	7:30	46	91	0.6	131	27.65	0
12/11/2007	7:35	46	91	0.6	135	27.65	0
12/11/2007	7:40	47	91	0.6	139	27.65	0
12/11/2007	7:45	47	91	0.6	137	27.65	0
12/11/2007	7:50	47	91	1.0	133	27.65	0
12/11/2007	7:55	47	91	0.7	130	27.65	0
12/11/2007	8:00	46	91	0.6	158	27.65	0
12/11/2007	8:05	47	91	0.6	295	27.66	0
12/11/2007	8:10	47	92	0.8	169	27.66	0
12/11/2007	8:15	47	91	0.6	127	27.66	0
12/11/2007	8:20	47	91	0.6	71	27.66	0
12/11/2007	8:25	47	92	0.6	140	27.66	0
12/11/2007	8:30	47	91	0.6	140	27.66	0
12/11/2007	8:35	47	91	0.6	135	27.66	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	8:40	47	91	0.6	135	27.66	0
12/11/2007	8:45	48	92	0.6	135	27.66	0
12/11/2007	8:50	48	92	0.6	136	27.66	0
12/11/2007	8:55	48	92	0.6	136	27.66	0
12/11/2007	9:00	49	92	0.6	253	27.66	0
12/11/2007	9:05	49	92	2.7	308	27.66	0
12/11/2007	9:10	49	92	2.5	306	27.66	0
12/11/2007	9:15	50	92	2.2	309	27.66	0
12/11/2007	9:20	50	92	2.4	331	27.66	0
12/11/2007	9:25	50	92	3.2	320	27.67	0
12/11/2007	9:30	51	92	3.6	319	27.67	0
12/11/2007	9:35	51	92	3.0	312	27.67	0
12/11/2007	9:40	51	92	2.4	313	27.68	0
12/11/2007	9:45	51	92	1.7	247	27.68	0
12/11/2007	9:50	51	91	0.6	103	27.68	0
12/11/2007	9:55	52	91	0.6	110	27.68	0
12/11/2007	10:00	52	91	0.6	143	27.68	0
12/11/2007	10:05	53	92	0.7	124	27.68	0
12/11/2007	10:10	53	92	0.9	133	27.68	0
12/11/2007	10:15	54	92	0.7	166	27.68	0
12/11/2007	10:20	54	92	1.0	134	27.68	0
12/11/2007	10:25	55	92	0.9	126	27.68	0
12/11/2007	10:30	55	91	1.0	105	27.68	0
12/11/2007	10:35	56	91	0.9	110	27.68	0
12/11/2007	10:40	57	89	0.8	107	27.68	0
12/11/2007	10:45	58	84	1.2	118	27.68	0
12/11/2007	10:50	59	80	1.0	116	27.68	0
12/11/2007	10:55	60	75	1.1	116	27.68	0
12/11/2007	11:00	61	72	0.8	111	27.68	0
12/11/2007	11:05	61	71	0.9	114	27.68	0
12/11/2007	11:10	61	71	0.8	115	27.68	0
12/11/2007	11:15	62	70	1.3	106	27.68	0
12/11/2007	11:20	63	70	1.4	119	27.68	0
12/11/2007	11:25	63	68	1.3	108	27.67	0
12/11/2007	11:30	64	67	2.0	120	27.67	0
12/11/2007	11:35	64	67	1.3	114	27.67	0
12/11/2007	11:40	65	66	3.6	123	27.67	0
12/11/2007	11:45	65	65	2.7	125	27.67	0
12/11/2007	11:50	65	64	2.1	110	27.67	0
12/11/2007	11:55	65	65	2.1	134	27.67	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	12:00	66	63	3.1	128	27.66	0
12/11/2007	12:05	66	62	2.2	162	27.66	0
12/11/2007	12:10	66	62	1.8	127	27.66	0
12/11/2007	12:15	66	62	1.3	101	27.66	0
12/11/2007	12:20	67	60	2.4	13	27.66	0
12/11/2007	12:25	67	59	2.7	12	27.66	0
12/11/2007	12:30	68	59	1.9	20	27.66	0
12/11/2007	12:35	68	57	2.4	70	27.66	0
12/11/2007	12:40	68	57	2.4	74	27.66	0
12/11/2007	12:45	69	54	2.9	12	27.66	0
12/11/2007	12:50	69	52	4.4	313	27.66	0
12/11/2007	12:55	69	53	2.8	58	27.66	0
12/11/2007	13:00	70	52	3.4	99	27.66	0
12/11/2007	13:05	70	52	3.0	106	27.66	0
12/11/2007	13:10	70	52	3.3	90	27.65	0
12/11/2007	13:15	70	51	1.9	98	27.65	0
12/11/2007	13:20	70	50	2.5	124	27.65	0
12/11/2007	13:25	71	50	1.6	97	27.65	0
12/11/2007	13:30	71	49	1.9	94	27.65	0
12/11/2007	13:35	71	48	2.3	123	27.65	0
12/11/2007	13:40	71	48	2.1	103	27.65	0
12/11/2007	13:45	71	47	1.9	93	27.64	0
12/11/2007	13:50	72	46	2.5	108	27.64	0
12/11/2007	13:55	72	46	2.5	120	27.64	0
12/11/2007	14:00	73	44	1.0	123	27.64	0
12/11/2007	14:05	73	43	2.6	97	27.64	0
12/11/2007	14:10	73	44	1.9	158	27.64	0
12/11/2007	14:15	73	43	2.7	91	27.64	0
12/11/2007	14:20	73	43	2.4	123	27.64	0
12/11/2007	14:25	73	43	2.5	113	27.65	0
12/11/2007	14:30	73	43	2.7	117	27.65	0
12/11/2007	14:35	73	43	2.4	111	27.65	0
12/11/2007	14:40	73	43	2.9	110	27.65	0
12/11/2007	14:45	73	43	3.0	115	27.65	0
12/11/2007	14:50	73	43	2.3	123	27.65	0
12/11/2007	14:55	73	42	2.8	138	27.65	0
12/11/2007	15:00	73	43	2.3	129	27.66	0
12/11/2007	15:05	73	43	4.2	121	27.66	0
12/11/2007	15:10	73	44	2.9	105	27.66	0
12/11/2007	15:15	73	44	2.7	123	27.66	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	15:20	73	43	2.5	117	27.66	0
12/11/2007	15:25	73	43	2.7	117	27.66	0
12/11/2007	15:30	73	43	1.8	125	27.66	0
12/11/2007	15:35	73	42	2.1	133	27.66	0
12/11/2007	15:40	73	43	2.2	114	27.66	0
12/11/2007	15:45	73	44	3.4	101	27.66	0
12/11/2007	15:50	72	45	1.7	88	27.66	0
12/11/2007	15:55	71	48	2.4	110	27.66	0
12/11/2007	16:00	70	49	2.3	96	27.66	0
12/11/2007	16:05	69	51	2.3	88	27.66	0
12/11/2007	16:10	68	52	2.3	117	27.66	0
12/11/2007	16:15	68	52	2.6	109	27.66	0
12/11/2007	16:20	68	54	1.4	115	27.66	0
12/11/2007	16:25	67	55	2.1	123	27.66	0
12/11/2007	16:30	67	55	1.6	92	27.65	0
12/11/2007	16:35	67	55	2.2	90	27.65	0
12/11/2007	16:40	67	55	1.1	98	27.64	0
12/11/2007	16:45	67	55	2.2	84	27.64	0
12/11/2007	16:50	67	56	2.0	101	27.64	0
12/11/2007	16:55	67	56	2.6	85	27.63	0
12/11/2007	17:00	67	56	1.9	85	27.63	0
12/11/2007	17:05	66	57	2.1	102	27.63	0
12/11/2007	17:10	66	57	3.2	80	27.63	0
12/11/2007	17:15	66	57	2.5	87	27.63	0
12/11/2007	17:20	66	58	1.6	107	27.63	0
12/11/2007	17:25	66	58	3.1	101	27.62	0
12/11/2007	17:30	65	59	2.7	91	27.62	0
12/11/2007	17:35	65	59	3.1	89	27.62	0
12/11/2007	17:40	65	59	2.2	93	27.62	0
12/11/2007	17:45	65	59	2.4	103	27.62	0
12/11/2007	17:50	65	60	2.5	108	27.62	0
12/11/2007	17:55	65	60	2.1	98	27.62	0
12/11/2007	18:00	64	61	2.5	95	27.62	0
12/11/2007	18:05	65	60	4.6	91	27.62	0
12/11/2007	18:10	65	60	3.8	104	27.62	0
12/11/2007	18:15	64	61	2.7	98	27.62	0
12/11/2007	18:20	64	61	2.3	103	27.61	0
12/11/2007	18:25	64	62	1.5	85	27.61	0
12/11/2007	18:30	64	62	1.0	95	27.62	0
12/11/2007	18:35	63	64	1.9	33	27.62	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	18:40	63	64	1.9	94	27.62	0
12/11/2007	18:45	63	64	1.7	101	27.62	0
12/11/2007	18:50	62	64	2.5	75	27.61	0
12/11/2007	18:55	62	64	1.7	101	27.61	0
12/11/2007	19:00	62	65	1.6	79	27.61	0
12/11/2007	19:05	62	65	1.8	106	27.61	0
12/11/2007	19:10	62	65	1.7	84	27.61	0
12/11/2007	19:15	61	66	1.1	157	27.61	0
12/11/2007	19:20	59	70	1.8	149	27.61	0
12/11/2007	19:25	58	73	1.7	140	27.61	0
12/11/2007	19:30	58	73	1.7	137	27.61	0
12/11/2007	19:35	58	73	1.2	142	27.60	0
12/11/2007	19:40	57	75	1.2	147	27.60	0
12/11/2007	19:45	56	76	1.6	134	27.60	0
12/11/2007	19:50	56	77	1.2	133	27.60	0
12/11/2007	19:55	56	78	1.2	136	27.60	0
12/11/2007	20:00	56	77	1.5	135	27.60	0
12/11/2007	20:05	56	78	1.4	153	27.60	0
12/11/2007	20:10	55	79	0.7	157	27.59	0
12/11/2007	20:15	55	80	1.0	149	27.59	0
12/11/2007	20:20	56	79	1.0	135	27.59	0
12/11/2007	20:25	56	79	1.6	174	27.59	0
12/11/2007	20:30	57	77	1.2	118	27.59	0
12/11/2007	20:35	56	77	1.1	146	27.59	0
12/11/2007	20:40	56	79	1.4	132	27.59	0
12/11/2007	20:45	56	79	1.2	139	27.59	0
12/11/2007	20:50	55	80	0.8	112	27.58	0
12/11/2007	20:55	55	80	1.5	104	27.58	0
12/11/2007	21:00	55	79	1.0	142	27.58	0
12/11/2007	21:05	56	80	1.2	116	27.58	0
12/11/2007	21:10	56	80	1.5	119	27.58	0
12/11/2007	21:15	56	79	1.2	127	27.58	0
12/11/2007	21:20	55	80	1.1	150	27.58	0
12/11/2007	21:25	55	83	1.6	104	27.57	0
12/11/2007	21:30	55	80	1.3	132	27.57	0
12/11/2007	21:35	55	80	1.5	109	27.57	0
12/11/2007	21:40	55	81	1.7	128	27.57	0
12/11/2007	21:45	55	81	1.8	155	27.57	0
12/11/2007	21:50	54	82	1.6	134	27.57	0
12/11/2007	21:55	54	83	1.0	119	27.57	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/11/2007	22:00	54	83	0.8	128	27.57	0
12/11/2007	22:05	54	83	1.7	166	27.57	0
12/11/2007	22:10	54	83	1.5	144	27.57	0
12/11/2007	22:15	54	83	1.5	126	27.57	0
12/11/2007	22:20	54	83	1.9	131	27.57	0
12/11/2007	22:25	54	83	1.2	123	27.56	0
12/11/2007	22:30	54	82	1.6	127	27.56	0
12/11/2007	22:35	54	83	1.9	125	27.56	0
12/11/2007	22:40	54	82	1.6	148	27.56	0
12/11/2007	22:45	54	84	1.6	110	27.56	0
12/11/2007	22:50	54	82	1.6	111	27.56	0
12/11/2007	22:55	54	83	1.8	138	27.55	0
12/11/2007	23:00	54	82	1.1	135	27.55	0
12/11/2007	23:05	53	84	1.3	134	27.55	0
12/11/2007	23:10	53	85	1.3	137	27.55	0
12/11/2007	23:15	53	86	1.5	127	27.55	0
12/11/2007	23:20	52	86	1.2	123	27.55	0
12/11/2007	23:25	52	87	1.1	122	27.55	0
12/11/2007	23:30	53	88	1.3	123	27.55	0
12/11/2007	23:35	53	87	1.4	120	27.54	0
12/11/2007	23:40	53	86	1.0	121	27.54	0
12/11/2007	23:45	53	87	1.3	102	27.54	0
12/11/2007	23:50	53	87	1.9	141	27.54	0
12/11/2007	23:55	52	86	1.6	126	27.53	0
12/12/2007	0:00	52	87	1.2	136	27.53	0
12/12/2007	0:05	51	88	1.4	124	27.53	0
12/12/2007	0:10	51	89	1.9	115	27.53	0
12/12/2007	0:15	53	90	1.8	106	27.52	0
12/12/2007	0:20	53	88	1.7	115	27.52	0
12/12/2007	0:25	54	88	2.3	107	27.52	0
12/12/2007	0:30	55	84	1.9	108	27.52	0
12/12/2007	0:35	56	83	2.1	110	27.52	0
12/12/2007	0:40	56	82	1.8	112	27.52	0
12/12/2007	0:45	56	82	1.4	125	27.52	0
12/12/2007	0:50	55	82	1.7	129	27.52	0
12/12/2007	0:55	54	83	1.5	132	27.52	0
12/12/2007	1:00	54	85	1.5	127	27.52	0
12/12/2007	1:05	53	85	1.1	110	27.52	0
12/12/2007	1:10	53	85	1.3	148	27.52	0
12/12/2007	1:15	52	86	0.9	135	27.52	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/12/2007	1:20	52	86	0.9	138	27.52	0
12/12/2007	1:25	52	87	0.9	161	27.52	0
12/12/2007	1:30	51	88	1.0	155	27.52	0
12/12/2007	1:35	51	88	1.0	144	27.52	0
12/12/2007	1:40	51	89	0.9	145	27.52	0
12/12/2007	1:45	51	89	1.0	148	27.52	0
12/12/2007	1:50	51	89	1.1	130	27.52	0
12/12/2007	1:55	51	89	0.8	138	27.52	0
12/12/2007	2:00	51	90	0.7	153	27.52	0
12/12/2007	2:05	51	90	0.8	129	27.52	0
12/12/2007	2:10	51	90	0.7	138	27.52	0
12/12/2007	2:15	51	90	0.7	162	27.52	0
12/12/2007	2:20	51	90	0.7	153	27.52	0
12/12/2007	2:25	51	90	0.6	145	27.52	0
12/12/2007	2:30	51	90	0.6	134	27.52	0
12/12/2007	2:35	51	90	0.6	133	27.52	0
12/12/2007	2:40	51	90	0.6	44	27.52	0
12/12/2007	2:45	50	90	1.2	4	27.52	0
12/12/2007	2:50	50	91	0.6	147	27.52	0
12/12/2007	2:55	51	90	0.6	128	27.52	0
12/12/2007	3:00	50	90	0.6	128	27.51	0
12/12/2007	3:05	50	90	1.0	140	27.51	0
12/12/2007	3:10	50	90	0.6	126	27.51	0
12/12/2007	3:15	50	90	1.0	125	27.51	0
12/12/2007	3:20	50	91	0.8	144	27.51	0
12/12/2007	3:25	50	91	0.9	103	27.51	0
12/12/2007	3:30	50	91	0.6	93	27.51	0
12/12/2007	3:35	50	91	0.6	117	27.51	0
12/12/2007	3:40	50	91	1.0	149	27.51	0
12/12/2007	3:45	51	91	0.6	141	27.51	0
12/12/2007	3:50	50	91	0.6	133	27.51	0
12/12/2007	3:55	50	91	0.6	144	27.51	0
12/12/2007	4:00	50	91	0.6	130	27.51	0
12/12/2007	4:05	50	91	0.6	138	27.51	0
12/12/2007	4:10	50	91	0.6	136	27.50	0
12/12/2007	4:15	50	91	0.7	150	27.50	0
12/12/2007	4:20	50	91	0.7	140	27.50	0
12/12/2007	4:25	50	91	0.6	134	27.49	0
12/12/2007	4:30	50	91	0.6	175	27.49	0
12/12/2007	4:35	50	91	0.6	128	27.49	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/12/2007	4:40	50	91	1.6	149	27.49	0
12/12/2007	4:45	49	90	1.0	112	27.49	0
12/12/2007	4:50	48	90	1.0	146	27.49	0
12/12/2007	4:55	48	91	0.9	222	27.49	0
12/12/2007	5:00	48	91	1.4	163	27.49	0
12/12/2007	5:05	48	91	0.6	121	27.49	0
12/12/2007	5:10	48	91	1.0	135	27.48	0
12/12/2007	5:15	48	91	1.5	147	27.48	0
12/12/2007	5:20	48	91	1.9	153	27.49	0
12/12/2007	5:25	48	91	1.1	138	27.49	0
12/12/2007	5:30	48	91	0.9	138	27.49	0
12/12/2007	5:35	47	91	1.6	138	27.49	0
12/12/2007	5:40	48	91	0.6	140	27.49	0
12/12/2007	5:45	48	91	0.6	168	27.49	0
12/12/2007	5:50	48	91	1.1	73	27.49	0
12/12/2007	5:55	48	91	1.6	132	27.49	0
12/12/2007	6:00	48	91	1.1	60	27.49	0
12/12/2007	6:05	49	92	1.1	161	27.48	0
12/12/2007	6:10	49	91	1.8	116	27.48	0
12/12/2007	6:15	48	91	2.3	123	27.48	0
12/12/2007	6:20	49	92	1.8	135	27.48	0
12/12/2007	6:25	49	91	1.7	130	27.48	0
12/12/2007	6:30	48	91	1.0	140	27.48	0
12/12/2007	6:35	48	91	0.7	103	27.49	0
12/12/2007	6:40	49	91	0.8	144	27.49	0
12/12/2007	6:45	48	91	1.3	137	27.49	0
12/12/2007	6:50	49	91	1.2	138	27.49	0
12/12/2007	6:55	49	91	0.8	148	27.49	0
12/12/2007	7:00	49	91	0.6	112	27.49	0
12/12/2007	7:05	48	91	1.9	143	27.49	0
12/12/2007	7:10	48	91	2.1	156	27.49	0
12/12/2007	7:15	48	91	0.8	129	27.49	0
12/12/2007	7:20	48	91	0.7	150	27.49	0
12/12/2007	7:25	48	91	0.8	111	27.49	0
12/12/2007	7:30	48	91	1.2	142	27.49	0
12/12/2007	7:35	48	91	0.6	151	27.49	0
12/12/2007	7:40	48	91	0.6	140	27.49	0
12/12/2007	7:45	48	91	0.6	132	27.49	0
12/12/2007	7:50	48	91	0.6	129	27.49	0
12/12/2007	7:55	48	91	0.6	149	27.49	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/12/2007	8:00	49	92	1.0	90	27.49	0
12/12/2007	8:05	49	91	1.8	144	27.49	0
12/12/2007	8:10	48	91	1.7	110	27.49	0
12/12/2007	8:15	48	91	1.7	84	27.50	0
12/12/2007	8:20	49	92	1.2	165	27.49	0
12/12/2007	8:25	49	92	0.7	163	27.49	0
12/12/2007	8:30	49	92	0.6	122	27.50	0
12/12/2007	8:35	50	92	0.6	149	27.50	0
12/12/2007	8:40	50	92	0.8	127	27.50	0
12/12/2007	8:45	50	92	1.2	160	27.50	0
12/12/2007	8:50	51	92	0.8	138	27.51	0
12/12/2007	8:55	51	92	0.6	152	27.51	0
12/12/2007	9:00	51	92	0.8	175	27.51	0
12/12/2007	9:05	51	92	0.7	140	27.51	0
12/12/2007	9:10	52	92	0.7	136	27.51	0
12/12/2007	9:15	52	92	0.9	117	27.51	0
12/12/2007	9:20	53	92	0.6	124	27.51	0
12/12/2007	9:25	53	92	0.6	112	27.51	0
12/12/2007	9:30	53	92	0.8	119	27.52	0
12/12/2007	9:35	53	92	0.7	114	27.52	0
12/12/2007	9:40	54	92	0.8	128	27.52	0
12/12/2007	9:45	54	92	0.7	123	27.52	0
12/12/2007	9:50	54	92	0.7	135	27.52	0
12/12/2007	9:55	55	92	0.8	127	27.52	0
12/12/2007	10:00	55	92	0.6	103	27.52	0
12/12/2007	10:05	56	91	1.3	35	27.52	0
12/12/2007	10:10	56	90	0.6	197	27.52	0
12/12/2007	10:15	57	87	0.8	226	27.53	0
12/12/2007	10:20	59	77	1.2	229	27.54	0
12/12/2007	10:25	61	68	1.9	262	27.54	0
12/12/2007	10:30	62	65	2.9	283	27.54	0
12/12/2007	10:35	63	63	1.8	268	27.54	0
12/12/2007	10:40	64	61	2.3	268	27.54	0
12/12/2007	10:45	64	60	2.9	295	27.55	0
12/12/2007	10:50	65	60	1.7	315	27.54	0
12/12/2007	10:55	65	59	2.5	325	27.55	0
12/12/2007	11:00	65	59	1.4	244	27.55	0
12/12/2007	11:05	65	59	2.5	339	27.55	0
12/12/2007	11:10	65	59	3.3	311	27.55	0
12/12/2007	11:15	66	58	3.2	325	27.55	0

Wind direction is the direction from which the wind is blowing.

Local Climatological Data-Hourly Observations Table (continued)

Mills Gap Road TCE Site, Skyland, NC

Elevation: 2440 ft. above sea level

Latitude: 35° 29' 34.914" N

Longitude: 82° 30' 20.232" W

10 through 12 December 2007

Date	Time	Temp (F)	Relative Humd (%)	Wind Speed (mph)	Wind Dir (deg)	Station Press. (in Hg)	Total Precip. (in.)
12/12/2007	11:20	66	57	3.2	303	27.55	0
12/12/2007	11:25	67	57	2.8	273	27.55	0
12/12/2007	11:30	67	56	3.0	340	27.55	0
12/12/2007	11:35	67	56	3.3	288	27.55	0
12/12/2007	11:40	67	55	3.1	290	27.55	0
12/12/2007	11:45	68	54	3.5	289	27.55	0
12/12/2007	11:50	68	53	3.7	294	27.55	0
12/12/2007	11:55	68	53	3.7	288	27.54	0
12/12/2007	12:00	68	53	4.1	316	27.54	0
12/12/2007	12:05	69	53	6.3	318	27.54	0
12/12/2007	12:10	68	53	5.9	333	27.54	0
12/12/2007	12:15	69	53	6.1	303	27.54	0
12/12/2007	12:20	69	53	6.5	309	27.54	0
12/12/2007	12:25	68	53	6.1	301	27.54	0
12/12/2007	12:30	69	53	6.1	327	27.54	0
12/12/2007	12:35	69	53	7.6	330	27.55	0
12/12/2007	12:40	69	54	7.2	307	27.54	0
12/12/2007	12:45	69	54	6.9	323	27.54	0
12/12/2007	12:50	69	54	4.6	314	27.54	0
12/12/2007	12:55	68	55	6.4	310	27.55	0
12/12/2007	13:00	68	55	4.5	307	27.55	0
12/12/2007	13:05	68	55	6.1	315	27.54	0
12/12/2007	13:10	68	55	6.4	310	27.54	0
12/12/2007	13:15	68	55	7.3	331	27.54	0
12/12/2007	13:20	68	56	6.3	327	27.54	0
12/12/2007	13:25	68	56	6.5	334	27.54	0

Wind direction is the direction from which the wind is blowing.